The Boston Medical and Surgical Journal

TABLE OF CONTENTS

July 5, 1917

ORIGINAL ARTICLES

A REPORT OF SERVICE WITH THE FIRST HARVARD SURGICAL UNIT SERVING AT A BRITISH BASE HOSPITAL, WITH THE END-RESULTS OF THE CASES ONE YEAR LATER. *By Channing C. Simmons, M.D.*, Boston. 1

ASCENDING LYMPHOGENOUS RENAL INFECTION. *By Daniel N. Eisendrath, A.B., M.D.*, Chicago, and *Oscar T. Shultz, A.B., M.D.*, Chicago. 10

DISCUSSION OF DR. EISENDRATH'S PAPER. 13

SOCIETY REPORT

MEETING OF NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION. NOVEMBER 28, 1916. 15

BOOK REVIEWS

Social Diagnosis. By Mary E. Richmond. 17

State Board Questions and Answers. By R. Max Goepp, M.D. 18

Case Histories in Obstetrics. By Robert L. De Normandie, M.D. 18

A Manual of Pharmacology. By Torald Sollmann, M.D. 18

EDITORIALS

TUBERCULOSIS IN THE ARMY. 19

MEDICAL NOTES. 20

THE MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE SOCIETY. 23

MISCELLANY

NOTICES, APPOINTMENTS, RECENT DEATHS, ETC. 30

Original Articles

A REPORT OF A SERVICE WITH THE FIRST HARVARD SURGICAL UNIT SERVING AT A BRITISH BASE HOSPITAL, WITH THE END-RESULTS OF THE CASES ONE YEAR LATER.

BY CHANNING C. SIMMONS, M.D., BOSTON,

Assistant Visiting Surgeon, Massachusetts General Hospital; Assistant in Surgery, Harvard Medical School.

THE following is a report of the cases coming under my care at the 22d General Hospital during my service with the first Harvard Unit serving with the British Army in France. The service was short—from August 16 to October 2, 1915—practically seven weeks. As major I was responsible for five tent wards representing about one-third of the surgical cases. These wards held 139 beds which were increased towards the end of the service to 187, but at no time were they all filled. A medical officer, ranking as captain or lieutenant, was in charge of each ward and did the greater part of the routine work,—Drs. Bachman, Goodwin, Reardon, Steenberg and Stookey, and to them credit is due for any success the service may have had.

Although called a base hospital, we were not supposed to keep cases that had not a reasonable chance to recover in three or four weeks, consequently most of the interesting cases were sent to England after a few days' stay, depending on their condition and the demand for beds. The less seriously wounded remained in the hospital longest. During the Loos drive all cases, mild and severe, were sent to England as soon as they could be moved to make room. Cases were received at the hospital in from twelve hours to several days after injury, the average time being two to four days. Occasionally men wounded in the morning would arrive the same night. Cases received more than 48 hours after injury were usually serious and had been kept at the clearing station until in a proper condition to be moved. The impression was that a man, after he had once been removed from the field, received extremely good care and attention.

I have delayed publishing a report of the service till this time as I wished to determine the results in some of the more serious cases. The home address of all patients was obtained with this in view, and also the address of a relative or friend. Letters were sent November 1, 1916, a year after the injury, to 87 of the more seriously wounded, including all cases of compound fracture, all head, lung, and abdominal wounds, most of the cases that had had infection with the gas bacillus, and certain of the cases that had serious wounds of the soft parts. Replies have been received from 59. Few of the replies are of great scientific value, but all are extremely interesting, as the British Tommy is a prolific writer. With hardly an exception the men, although maimed for life, are happy and cheerful, and have even tried to enlist again and been refused. Certain of the figures given are not absolutely accurate but the errors are slight and relatively unimportant.

There were 310 patients admitted to my wards during the service, divided as follows:

Wounds	238
Civil injuries and diseases	45
Injuries, not wounds, due to military service	28

WOUNDS.

The wounds varied from the slightest scratch to severe multiple injuries, compound fractures, etc. During the September offensive about Loos practically every wound, no matter how trivial, was sent back to the Base Hospitals and it was not unusual at that time to have a patient admitted one day with, for instance, a slight abrasion of the scalp, and discharged the next. In the ordinary trench fighting the wounds were more serious, as slight injuries were attended to at the Clearing Hospitals. The wounds during this drive were chiefly bullet wounds, while those received in trench fighting were usually from fragments of high explosive shells. It is difficult to determine what type of missile caused a given wound, for although the patient has definite ideas on the subject, he often does not know. As far as can be determined, the wounds were as follows:

Rifle bullet	95
Shrapnel bullet	8
Shell casing	118
Hand or rifle grenade	17
Wounded by own grenades	2
Wounded by English bullets	2
Self-inflicted (?)	1

Wounds by Regions.

Head and face	46
Body (back)	41
Body (front)	19
Right upper extremity	35
Left upper extremity	62
Right lower extremity	40
Left lower extremity	35

The left upper extremity, including the shoulder, was more often the seat of injury than the head and face, although the steel helmet was not in use at this time. This part of the body is most often wounded as in trench fighting it is the most exposed, the left hand and arm protecting the face. Thus there were 17 wounds of the left hand and only four of the right. The wound was more often on the back than on the front of the body, due probably to the position of the men in the trenches. Fifty cases, 22%, presented multiple wounds. In 13 they were of one part of the body only, while in 37 they were widely scattered. Most of these were shell wounds, but some were caused by bullets, one man having rifle bullets in his foot, arm, and chest. A certain number had in-and-out wounds of different portions of the body caused by the same bullet, as, for example, in-and-out wounds of the soft parts of both thighs, both buttocks, etc.

Severity. Some idea of the severity of the wounds may be obtained by the disposal of the case. Cases were discharged to Convalescent Camp, Base Detail, or to England (hospital ship). If sent to the Camp they remained there for a short time and then rejoined their commands, and no case requiring a dressing could be discharged in this manner. Discharged to Base Detail implied that the patient was considered fit for light duty. Cases sent to England were usually seriously wounded, but I have divided this last group into the severe and slight wounds, which under ordinary circumstances would have stayed in the hospital a short time and been discharged to the Convalescent Camp, but which during the Loos drive were sent to England at once to free the beds. This last and the first two groups would be able to return to their commands in a short time.

Discharges.

Convalescent camp		72
Base detail		12
Dead		3
Transferred medical		3
Sent to England		
	severely wounded	70
	slightly wounded	38
Remaining in wards		40

Thus in 122 cases, or 51%, the wounds were comparatively slight and the man returned to his command in a short time. A larger percentage than this returned to active service, as many seriously wounded and sent to England permanently recovered, and also all cases remaining in the wards at the end of the service are classed as permanently disabled, which they were not. It is interesting to note that of the 22 cases seriously wounded, from whom I had letters and who had returned to active service, 10 have been wounded again or killed.

OPERATIONS.

There were 113 operations done on the service, of which there are records in the operating room, but many minor ones were done in the wards. Of these, 29 were done by me and 84 by the medical officers. During the drive many minor cases were sent directly to England without having foreign bodies removed. The average case seen was one of minor surgery,—the removal of a foreign body, opening an abscess, etc. On the other hand, certain cases, brain and abdominal wounds, compound fractures, and cases with a gas bacillus infection, for example, are the most major surgery, and require the best judgment possible, only to be acquired by experience with that type of case.

There were two cases admitted, both shell wounds, that had had a traumatic amputation of the left hand. Two amputations were performed on the service, both for gas gangrene and both compound fractures. The English army surgeon is more inclined to amputate in compound fracture than the American, who is much more conservative. Whether or not in war times this had been proved to be the most efficient treatment and enables the man to become a wage-earner sooner, I do not know. My personal feeling is to save everything possible, and it was discouraging to learn that a limb, saved with difficulty, was amputated soon after the patient was transferred to England. Three cases of compound fracture that were doing well at the time of transfer, had the limb amputated later. From the letters received from these patients, describing their condition, I do not think an American surgeon would have considered amputation.

MORTALITY.

There was a mortality of three cases, but a fourth case, a fracture of the dorsal spine, was sent to England and probably died soon after. It is to be inferred from this that most of the serious cases were treated at the Clearing Hospitals, and that the mortally wounded usually die in a few days. It would also seem that any cases living 5 to 7 days have a very good chance of ultimate recovery.

CASE 73. Shell wound. Compound fracture of skull, penetrating wound of lung with hemothorax, multiple wounds of back and right arm with gas bacillus infection. Died two days after admission. Autopsy.

CASE 10. Shell wound of groin with division of the femoral artery. Patient moribund when admitted and died in a few hours of hemorrhage and shock.

CASE 221. Shell wound of leg with compound fracture of fibula, bullet wound and compound fracture of humerus, pneumonia. Patient lay between the trenches in the rain for 36 hours before being brought in. Gas gangrene of leg. Amputation. Death three days later.

SEPSIS.

Most of the wounds were infected and practically all were treated as septic. This was particularly the case with the shell wounds. The fragments invariably carried in pieces of dirty clothing, and it was the rule to explore every case and remove the foreign body and, more important, the cloth. We found that in jagged shell wounds caused by a "side swipe" with a large fragment of shell and in which there was no penetration, time could be saved in healing by excising the sloughing edges and base of the wound, and doing a secondary suture. Something was always gained, although slight sepsis was to be expected. Bullet wounds were less apt to be followed by sepsis, and a certain number of both in-and-out and penetrating wounds remained clean and healed rapidly.

Infection with a bacillus of the gas-forming group is the thing to be dreaded, but the bacillus is not as virulent as the one commonly met with in this country. In some cases where a positive culture was obtained, there were no constitutional symptoms. Clinically, the short, thick forms appeared to be more virulent than the long, thin forms that at times appeared in chains. Credit should be given to Dr. F. R. Frazer for his careful bacteriological work under very adverse conditions. There were 25 cases of gas bacillus infection on the service, with two deaths, but in neither of these did the infection alone cause the fatal result. Full bacteriological reports were obtained in 15, while the other 10 cases were seen during the rush, and the diagnosis was only clinical or made from smears, but cannot be doubted. The wounds were caused by shell fragments in 12 cases and bullets in 13, but 10 of these latter were compound fractures. The appearance of the wounds was characteristic. The limb was swollen, the tissues necrotic and exuding a thin watery pus filled with fine air bubbles. The odor is unmistakable. But three of the cases presented subcutaneous emphysema. Probably the other cases were operated upon before it developed.

The cultures from the wounds resembled cultures from feces. I have more or less detailed reports of cultures from 35 wounds infected with gas bacillus that were made in the hospital. One is given which is typical of them all.

CASE 87. Compound fracture fibula. Multiple wounds of both arms (shell).

Sept. 8. Smear, no organisms. Culture (agar). Gram-negative bacillus (colon?) and a Gram-positive bacillus resembling gas bacillus. Anaerobic agar, sterile. Anaerobic litmus milk, sterile.

Sept. 9. Smear, streptococci and Gram-positive and negative bacilli. Culture (agar) staphylococci and streptococci. Anaerobic agar, Gram-negative bacillus. Anaerobic litmus milk, acid, clotted, gas formation, and gas bacillus present.

Sept. 10. Second culture. Smear, diplococci. Culture (agar) streptococci. Anaerobic agar, sterile, 24 hours. Anaerobic litmus milk, acid, clotted, gas formation, and gas bacillus present.

For the determination of the presence of the gas bacillus only, Dr. Frazer made the culture in boiling milk. Bacteria, except the spores of the gas bacillus, were killed by the heat, but the spores of the gas bacillus withstood the temperature for the short time it took the milk to cool.

Cultures were taken from a series of 15 ordinary wounds when the patients were admitted. The wounds were cleaned, and healed the way slightly septic wounds ordinarily do. Three had, however, a pure culture of gas bacilli, although clinically they showed no signs of it. One case, a severe wound of the arm, complained a week after admission of soreness in a finger. Examination showed a shell fragment one-half inch in diameter which had been overlooked. It was removed and the wound healed promptly although culture showed a pure culture of gas bacillus.

Most wounds infected with the gas bacillus were thoroughly cleaned out, all dead tissue cut away, and packed wide open. Peroxide of hydrogen dressings were used or, when possible, a constant irrigation of hyperchlorous acid.

TETANUS.

There were no cases of tetanus, although the wounds were very dirty. As a routine, all cases were given anti-tetanic serum at the front, but occasionally a case was overlooked. On admission all cases were questioned as to whether they had received the serum, and if not it was immediately given. Eleven cases had more or less serum sickness coming on from five to twenty days after its administration. These varied from transient urticaria to severe prostration with high fever lasting three or four days. There were two cases of giant urticaria.

WOUNDS OF THE LUNG.

There were 11 cases of wounds of the lungs with one death (wound complicated by a compound fracture of the skull), and no cases of empyema. Four were caused by a rifle ball, one by a shrapnel ball, and six by shell fragments. Four, three rifle bullet and the shrapnel bullet wound, were in-and-out wounds, and in five a piece of shell was in the lung. Two cases were fracture of the lung without penetration. The cases reached the hospital in from one to five days after the injury, the average time being two and one-half days. Constitutional symptoms were comparatively slight in all and the temperature and pulse were only slightly elevated, returning to normal in a few days in all but one case. Cough was present only six times, the sputum being bloody in five cases and mucoid in one.

The physical signs were the same in eight of the cases. There was evidence of hemothorax above which was consolidated or compressed lung, but with a small area of normal respiration at the apex. Two cases, both with profuse bloody sputum, had no hemothorax at entrance, one and one and one-half days after injury. Examination showed coarse, moist râles only, but one case developed hemothorax five days later,—an in-and-out bullet wound. The other case, a fracture without penetration, never had an effusion.

No case developed empyema, although on account of the persistent temperature it was suspected in one. A tap revealed only bloody fluid, which clotted on being withdrawn. Culture was sterile. The case complicated by fractured skull died and an autopsy was obtained. The pleural cavity contained two litres of bloody fluid. The lung was collapsed and showed a few areas of consolidation. It was necessary to place the organ under the fluoroscope before the missile, a piece of casing one-fourth inch in diameter, could be found. Although no accurate analysis of the fluid was made, it appeared to be about one-third blood and two-thirds serum.

Two cases had wounds of other portions of the body, and one pneumonia of the unwounded lung.

The end-results are known in nine of the eleven cases. One died. Four of the other eight are back on active service and one has been wounded again. Two of these were fracture without penetration, and in two a shell fragment was in the lung. Only two of these men had a hemothorax and one of them has spit up blood twice since the injury and has some shortness of breath. The fifth case, an in-and-out bullet wound with hemothorax and subcutaneous emphysema, has no symptoms. He also had a bullet wound of both legs.

Two other cases are working at a base,—an in-and-out wound, and a shell wound. Both had a hemothorax and both now complain of some shortness of breath. One has had "pleurisy" within a few months, and the other says that a recent x-ray shows some consolidation.

The other two cases have been discharged as unfit for service. Both have shortness of breath and both say that a recent examination of the lung showed that it "was not normal." One, a miner, can work only three days a week.

ABDOMINAL WOUNDS.

There were only three cases of abdominal wounds, two of which had been operated upon at the Clearing Hospital and were convalescent when admitted. All recovered. In one the abdominal cavity had been opened in the groin by a large shell fragment. This man at present has no abdominal symptoms, but is incapacitated as he also had a traumatic amputation of the left hand. One case had multiple bullet wounds of the intestine, which had been sutured at the front. He also had a compound fracture of both bones of the forearm and pneumonia. In the third case a shrapnel ball had entered the buttocks. He was admitted 36 hours after injury with a history of suppression of urine for that length of time. X-ray showed the ball in the pelvis. Suprapubic cystotomy was done and the ball found loose in the bladder. There was considerable sloughing of tissues from extravasation of urine, but recovery was otherwise uneventful. The man reports a year later that for some time he had incontinence and occasionally passed blood but is now well. He has been working in a bank for the past four months.

SKULL AND SPINE.

Eight cases. There were six cases of fracture of the skull. Two were slight depressed fractures of the vertex without symptoms. The depression was elevated. Three had a compound fracture of the frontal bone, one of whom died. In the other two there was an extensive injury to the upper jaw and face with the loss of an eye. There were no cerebral symptoms in either. Both of these men have been heard from and both are now working. They sent me their photographs, and the cosmetic result is good considering the injury. It was necessary to do two plastic operations on one case.

The sixth case had a small piece of shell in the brain in the parietal region and a brain abscess. The fragment was removed and the abscess drained with the perforated metal tube suggested by Sargent. At discharge this patient was aphasic and had paresis of the face and arm. A letter from his mother states that he was in the hospital for some time, and several pieces of shell were removed from the scalp. His aphasia and paresis evidently cleared up as he was discharged to base duty, but recently he has lost his speech again.

Spine. Two cases. One case, now dead, had a fracture of the dorsal spine with complete paralysis (shrapnel ball). The other case had a fracture of the spinous processes of the first four dorsal vertebrae without symptoms. He is now on active service, but not in the trenches, as carrying a pack hurts his back.

PERIPHERAL NERVES.

There were but two cases of injury to the peripheral nerves recognized, one a paralysis of the recurrent laryngeal nerve following a wound of the neck, and the other a paralysis of the ulnar nerve in an extensive septic wound of the forearm. It was thought at the time that, owing to the hurry and the fact that most of our efforts were spent in combating sepsis, nerve injuries were overlooked, and this has proved to be the case. Five cases of compound fracture report by letter to have some nerve injury. In two of the six cases of fracture of the shaft of the humerus heard from, there is musculospiral paralysis. Both have been operated upon and in one, function has returned. The radial nerve was divided in two instances, but the disability is slight and both men are back on active service. There is one case of paralysis of the median and ulnar nerve in an extensively comminuted fracture of both bones of the forearm. This man has little use of his hand, but prefers it to an artificial one.

JAWS.

Contrary to the usual experience, there was a relatively small proportion of fractures of the jaws. There are only two cases, both upper jaws, and both complicated by fracture of the skull. Both have been heard from, and, considering the injury, the cosmetic results are good. Both are self-supporting.

COMPOUND FRACTURE.

A year ago I reported the compound fractures coming under my care (Boston Medical and Surgical Journal, Feb. 17, 1916) and will, therefore, consider only the results. There were 61 cases of compound fracture, or over 25% of all cases. Of these, 45 were of the long bones. Several points have been brought out by the letters.

Of the 45 cases, the end-results are known in 34. Two died. In thirteen of the cases from one to seven operations were done after their return to England for the removal of fragments of dead bone. Five cases had an injury to a peripheral nerve which was overlooked when the patient was under treatment in France, and two had had a plastic operation on the musculospiral nerve with one success. There was only one case of non-union. This was a patient with a fracture of both bones of the leg. This was plated, but the plate was later removed.

Three cases had an amputation performed after their transfer (see amputations). The cases are as follows:

Case 141. Sept. 26, 1915. Bullet wounds of the forearm, chest, and ankle, with fracture of a rib and the lower end of the tibia into the joint. Three bullets removed. Little comminution and no displacement of the fragments. The wounds of the arm and chest healed rapidly. After his return to England he had several operations for the removal

Compound Fractures.

Humerus	Total Cases	Cases Heard From	Other Operations	Results
Head	2	2		1 perfect, 1 dead (see fracture fibula).
Shaft	7	5	3	1 perfect, 4 with stiff elbow. 2 with musculospiral paralysis.
Lower end	3	3	1 Amputation	1 perfect (a crack only), 1 stiff elbow, 1 amputated in England.
Radius				
Head	1	1		stiff elbow.
Shaft	2	2		1 perfect, 1 amputation (gas gangrene).
Lower end	3	3		3 perfect.
Both Bones Forearm	3	2		1 perfect, 1 ulna and median paralysis.
Metacarpals	10	6	2	3 perfect, 3 some use of hand.
Femur	4	2	1	Both sinuses, 2 in. shortening. Walk with cane. (gas infection. A question of hip joint amputation in one case.)
Both Bones, Leg	2	1	1	Non-union.
Tibia	3	3	3	2 amputated in England, 1 has a sinus, but walks with cane.
Fibula	2	2		1 amputation for gas gangrene,—death. 1 perfect.
Metatarsals	2	2	1	1 perfect, 1 walks with cane.

of fragments of dead bone about the ankle and the opening of abscesses. Leg amputated in February, 1916.

Case 218. Sept. 28, 1915. Compound, badly comminuted fracture of the lower end of the tibia, extending into the joint. Rifle bullet in head of astragalus. Bullet removed. After transfer had many operations for fragments of dead bone, but wound healed in the spring of 1916, leaving the ankle stiff. In October. 1916, another abscess formed, and the leg was amputated in November, 1916, over a year from the time of injury.

Case 225. Sept. 28, 1916. In-and-out bullet wound which practically destroyed the elbow joint. Gas bacillus infection. At discharge the wounds were granulating well and the motions of the hand were good. The arm was amputated ten days after his transfer to England.

JOINTS.

There was only one case of a wound of a joint other than those occurring in compound fractures, or of the carpus or tarsus. In this case a small shell fragment was removed from the knee joint 24 hours after injury. The joint was washed out with salt solution and closed without drainage. The joint remained clean, although the superficial wound was infected. The man is back on active service, but the knee swells at times after violent exercise.

WOUNDS OF THE SOFT PARTS.

The following is a brief analysis of the wounds of the soft parts. These figures, as others, are not absolutely accurate, as cases wounded in two places, as the arm and leg, have usually been counted twice, while others have already been considered under other headings.

Shell wounds (no foreign body)	69
Shell wounds (foreign body)	59
Bullet wounds (no foreign body)	50
Bullet wounds (foreign body)	8
Shrapnel ball	1

The shell wounds, where there was no foreign body, were usually cuts with large fragments of casing. The bullet wounds were usually in-and-out wounds, but some were gutter wounds.

Head and scalp. 25 cases (other than fractures). All slight wounds. Most were caused by shells bursting near the patient, and the fragments either peppering the scalp or making slight cuts. A few were gutter wounds, which cut the scalp without injuring the bone. It was in this type of wound that excision and secondary suture gave the best results. Some idea of the severity of the wounds may be had by studying the discharges. 23 of the 25 patients were sent to the Convalescent Camp, or to Base Detail, well. Two were sent to England, to give more beds.

Neck. 6 cases. Five shell and one in-and-out bullet wound. The wounds were all slight with one exception,—a man with a small wound, recurrent laryngeal paralysis and pneumonia.

Body. Back 21, front 4. These were similar to all wounds of the soft parts, and the chief interest lies in the frequency with which the wound was on the back. The buttocks were proportionately commonly wounded,—6 cases. Most of the wounds were slight, 19 of the cases being well or practically so when last seen. Four were severe, one having a shrapnel ball pass through the back from the left shoulder to the right kidney, where it lodged without causing damage. Another case had a gas bacillus infection involving the ischio-rectal fossa.

Shoulder. 20 cases, 13 shell wounds and 7 bullet wounds. Of the latter, 4 were in-and-out wounds and 1 was a gutter wound. All were slight flesh wounds. In one case a shell fragment entered under the acromial end of the clavicle and was found, with the x-ray, in the mediastinum. Although it is difficult to see how the lung escaped injury, there were no symptoms referable to that organ. The man is now, one year later, on active service.

Arm. 19 cases, 12 bullet and 7 shell wounds. 7 were multiple. There were 3 moderately severe wounds, 1 being infected by a gas bacillus. This man, however, returned to active service, and has since been wounded again. I believe all the cases returned to active service.

Forearm. 19 cases, 9 bullet and 10 shell wounds. In the 9 bullet wounds, 8 were in-and-out or abrasions only, while in the other the bullet lodged against the ulna without fracturing it. In 7 of the shell wounds fragments were removed.

Hand. 15 cases, 2 bullet and 13 shell wounds. In two of the latter, only, was it necessary to remove a foreign body. The wounds were often severe as regards permanent disability, as several had one or more tendons severed or joints opened. One man had the tendons of the four fingers severed. Tendon suture was done 48 hours after the injury was received, and, although the wounds went septic, he writes a year later he has perfect use of his hand and is still in the service, but stationed at a base.

Thigh. 25 cases, 12 bullet and 13 shell wounds. Many of the bullet wounds were in-and-out, while in 11 of the shell wounds it was necessary to remove foreign bodies. Three wounds were infected by a gas bacillus.

Leg. 20 cases, 12 shell and 8 bullet wounds, of which 7 were in-and-out. Four of the wounds were severe.

Foot. 5 cases. All slight wounds, but the disability was relatively great. All would eventually permanently recover.

Burns. 2 cases. Both were of the face and hands, and were superficial. One was caused by the premature explosion of an English fire bomb, and the other by the explosion of a German grenade from which the man was attempting to make a souvenir.

INJURIES DUE TO SERVICE.

Twenty-eight cases. The injuries in this group, although not properly wounds, were due directly or indirectly to military service. There were 6 cases of fracture, 8 of minor sepsis, and 14 of sprains, etc.

Six of the cases, three fractures, were caused by horses or mules, and one, a fracture of both bones of the leg, by an automobile. Six cases were injured by being buried in earth or sand bags by the explosion of a shell. Most of these were minor injuries, but two were severe sacro-iliac strain. Several of these "buried cases" presented a peculiar mental condition, best described as having "lost their nerve," although the injury was comparatively slight.

The other injuries were caused by falling into shell holes, falling over a trench, entrenching, etc.

There were eight cases of minor sepsis, all trivial, several due to the conditions under which the men lived in the trenches.

Fractures	Metacarpal, rib, clavicle, nose, fibula, both bones of leg.	
Minor sepsis	Eight cases.	
Sprains, etc.	Sprained ankle	3
	Synovitis knee	3
	Dislocated semilunar cartilage	1
	Abrasions	3
	Sacro-iliac strain	3
	Tuberculosis hip	1

CASES OF CIVIL SURGERY.

Forty-five cases.

There were five cases of sprains or fracture, three being due to football; and two, dislocated semilunar cartilages of the knee, had had trouble for years, and should never have been accepted in the army.

Minor sepsis. Many of these, such as four cases of multiple boils, were probably due to the conditions in the trenches.

Abdominal cases. Eleven cases. There were two cases of appendicitis, one of an abdominal sinus following appendectomy eight years before, and eight cases of hernia. Hernia is common. Three of the cases, two inguinal and one ventral, had been operated upon previously, and were recurrent. One case had had a hernia for years, which had not bothered him until he entered the army one month before. This man also had thrombosis of the opththalmic vein, and should not have been passed by the examining surgeon. Three cases of hernia were operated upon and five were not. It is impossible to force a man to be operated upon if he does not wish it, and all patients have to be given the choice of a truss or an operation. A certain number choose a truss, as it means they will not be called upon to do active work, but be put at clerical work at the base.

Genito-urinary diseases. Five cases. There were two cases of acute epididymitis, one of syphilis, one of phimosis, and one of varicocele. Venereal diseases were uncommon, owing partly to the fact that they were all sent to a special venereal hospital.

Medical cases. Three medical cases were admitted to the wards,—a case of malaria, contracted in India, a case of diabetes, and one of pulmonary tuberculosis. These cases were transferred to the medical service. Several other cases that presented wounds were transferred to other departments, such as the dental, ear, or nose and throat, after the wounds had healed.

Varicose veins (3 cases). *Hemorrhoids* (10 cases). The three cases of varicose veins were not severe, and two I am inclined to think exaggerated the symptoms in order to get a rest. The hemorrhoid cases were probably due to the conditions in the trenches, and constipation, which was almost universal. Five were cases of many years' duration which had recurred, and five had had no trouble until they had been on active service. Six were operated upon and four refused, probably for the same reason the herniae refused,—they knew they would be put to work at the base and not be sent back to the front.

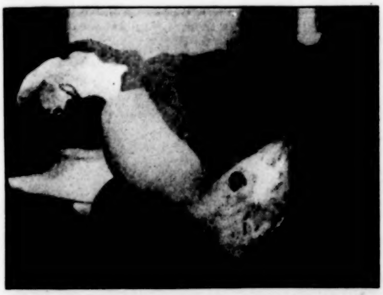


Fig. 1. Case 28. Compound fracture of the radius and division of the brachial artery at the bend of the elbow with gas bacillus infection. The arm is much swollen as far as the shoulder.

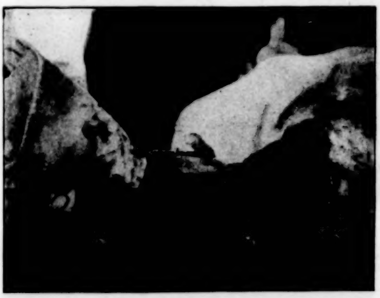


Fig. 2. Case 28 after operation. (See Fig. 1.) Multiple incisions have been made in the arm and forearm and large wicks, wet with hydrogen peroxide, passed from one wound to the other. Amputation was performed the following day for gangrene. The man is now well but almost destitute as he is unable to obtain work.

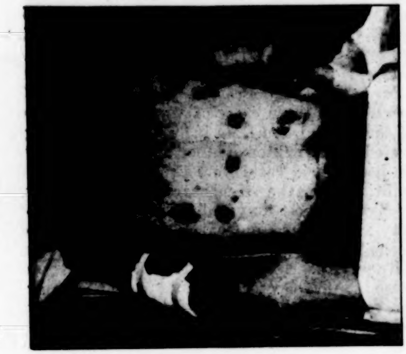


FIG. 3. Case 77. Multiple shell wounds of the back and compound fracture of the right humerus, with gas bacillus infection of all wounds. Foreign bodies removed and wounds drained. A year later patient reports that he has a useful arm but with some deformity. He is at present serving as an army cook.

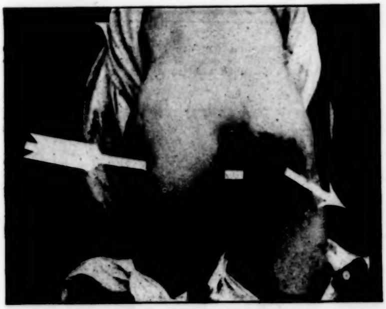


FIG. 4. Case 27. In-and-out wound of both buttocks, the arrow indicating the course of the bullet. The wound of entrance is hardly visible while the second wound of exit is quite large. The discoloration of the skin is due to iodine.

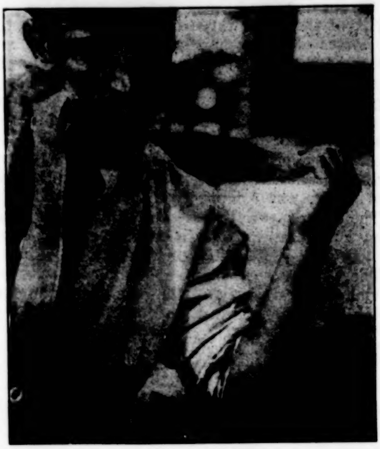


FIG. 5. Case 31. In-and-out wound of the forearm four days old. No disability. This man was discharged well five days later.

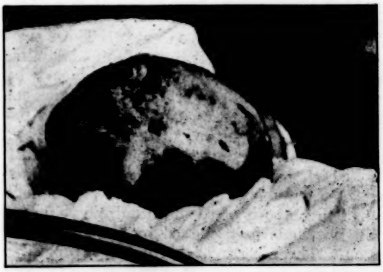


FIG. 6. Case 48. Multiple shell wounds of scalp with one fragment in the brain and brain abscess. Fragment removed and abscess drained with Sargent perforated metal tube. At discharge patient has a small brain hernia and paresis of the hand and face. A year later his mother wrote that he had been doing some work around a camp, but that he had recently lost his speech.

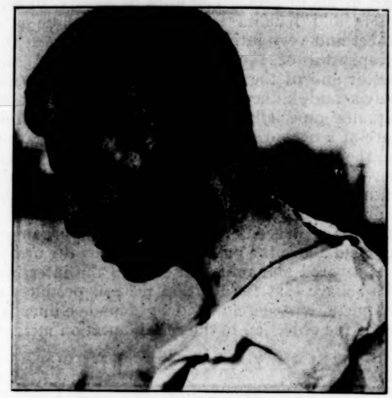


Fig. 7. Case 41. In-and-out, in-and-out wound of the face, made by a bullet. Note the comparatively small wound of entrance and large wound of exit. A salivary fistula persisted for some time, but the wounds were all healed in four weeks.

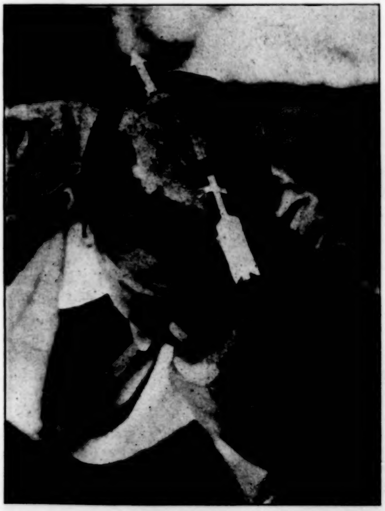


Fig. 8. Case 32. Gutter bullet wound of the scalp without injury to the skull. The arrow indicates direction of the bullet. Excision of wound with secondary suture followed by rapid healing. This man was killed later by the explosion of a German mine.

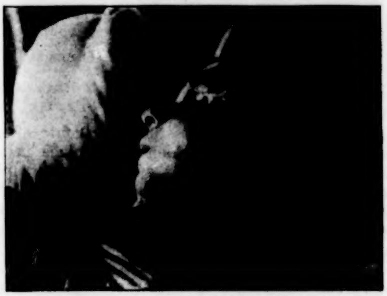


Fig. 9. Case 86. Compound fracture of the frontal bone and upper jaw with destruction of the eye. The wound extended into the mouth. No cerebral symptoms. A plastic operation to repair the cheek was done.

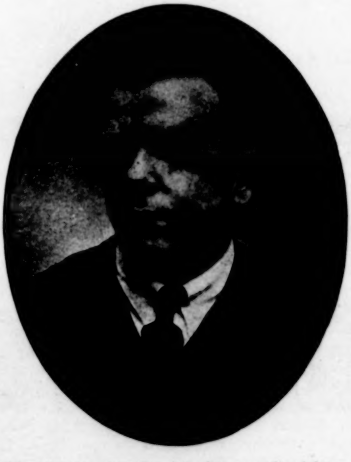


Fig. 10. Case 86. (See Fig. 9.) One year after injury. Two plastic operations were done after the patient returned to England. The man is working as a gardener.

ASCENDING LYMPHOGENOUS RENAL INFECTION.*

By Daniel N. Eisendrath, A.B., M.D., Chicago,
and
Oscar T. Schultz, A.B., M.D., Chicago.

[From the Morris Institute for Medical Research of the Michael Reese Hospital.]

We have attempted to study the route of infection of the kidney which takes place in an ascending direction along the interstitial lymphatics of the ureter. A preliminary report of our work was published early in the present year[1] and the complete results of our experiments will be published shortly.[2]

We have felt for some time that the older view of infections ascending from the bladder to the kidneys along the lumen of the ureter must be abandoned, except in cases of complete obstruction of the ureters. The work of Sakata, Bauereisen, and Kumita has shown that there is a direct and very intimate connection between the lymphatics of the bladder and those of the ureter and of the latter with those of the renal pelvis and kidney parenchyma. The work of Kumita especially has demonstrated the presence of a network of lymphatics in close relation to the blood vessels within the kidney. This network within the kidney communicates again with the lymphatics of the fatty capsule of the kidney (Fig. 1). In all previous experiments the ureter was either ligated and the organism injected above the point of ligation or the ureter was severed and reimplanted into the intestine. We believe that the ligation method produces a complete obstruction seldom found clinically, while the objection to the reimplantation method

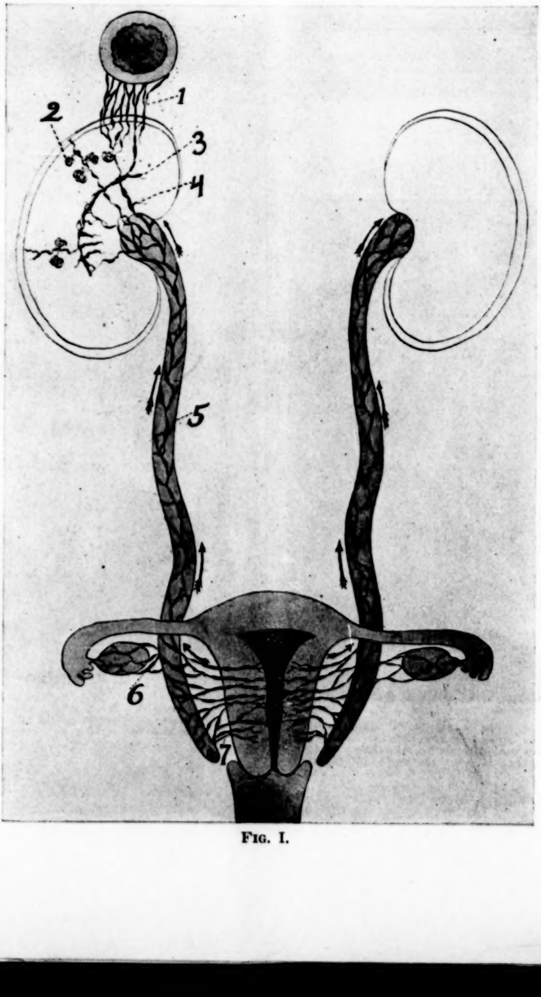


Fig. I.

---

* Read at a meeting of the New England Branch of the American Urological Association, Nov. 28, 1916.

is that the action of the ureteral sphincter is nullified, and that the opportunity for entrance of organisms into the lymphatics of the cut ends of the ureters allows pathologic changes to occur with such intensity that it is difficult to trace the paths of the infection.

Technic.

The organisms employed were Bacillus coli, Staphylococcus aureus and Bacillus proteus. We attempted to imitate conditions found clinically in cases of ascending renal infection in the human being, by making an emulsion of sterile salt solution and scrapings of four agar slant cultures of the organisms. This emulsion was then injected into the bladders of female animals (dogs and rabbits) through a sterile silver cannula of very narrow caliber. The external genitalia were first thoroughly cleansed and some of the urine obtained for cultures so as to determine whether any infection was present before the emulsion of the bacteria was injected. The animals having been anaesthetized with ether, every precaution was taken to avoid any injury to the mucosa of the bladder and urethra. A minimum degree of force was used in injecting the emulsion.

Our animals were killed at varying intervals with strychnine and cultures were immediately made from the heart's blood, from both kidneys and from the bladder. For microscopic study the urinary tract with the surrounding connective tissue was removed *en masse*. Areas from different portions of the bladder were first taken, then the entire ureter was divided into segments. The lowest segment included the uretero-vesical junction and the highest, the junction of the ureter and renal pelvis. Between these two, the ureter was divided into four segments.

The kidney sections were taken so as to include in one set the areas where the finer divisions of the renal pelvis receive the papillae and in another set as much as possible of the medulla and cortex in a single section. All tissues were imbedded in paraffin, cut serially and stained with hematoxylin and eosin. The various segments of the ureters were cut longitudinally in serial sections, so that one could follow the paths of the infection continuously from the bladder upward into the ureter and along the walls of this structure into the parenchyma of the kidney. We cannot emphasize too strongly the great value of longitudinal serial sections in following the evidences of infection along the lymphatics of the ureter.

In two series of experiments carried out according to this technic, just outlined, a total of thirty-seven animals were used. Of these, eleven were rabbits and twenty-six were dogs. Of the eleven rabbits, six showed involvement of the ureter, five of the pelvis, and six of the kidney. The pathogenic organism injected was recovered from the bladder five times; from the kidney twice.

Of the twenty-six dogs used, twenty-one showed ureteral involvement, sixteen pelvic involvement, and thirteen, lesions of the kidney. The organism injected was recovered from the bladder twelve times and from the kidney five times. Seven dogs were examined by the same method as controls. One of these showed the same type of lesion in the ureter and pelvis.

Microscopic Changes.

Five days after the introduction of the bacteria into the bladder the urinary tract is the seat of a well-marked sub-acute inflammatory reaction, which is chiefly infiltrative in character. The change is most marked in the sub-epithelial tissues of the lower end of the ureter, especially about the mouth of the latter, and in the tissues of the pelvis. At these situations the stroma is decidedly infiltrated with lymphocytes, the endothelium of the lymphatics is swollen and there are numerous foci of perivascular infiltration. The mucosa of the bladder is decidedly infiltrated and in the mucosa and sub-mucosa the lymphocytes are congregated about the vessels. The ureter, between its lower and upper ends, where the reaction is most pronounced, shows moderate paths of lymphoid infiltration of the stroma, epithelium and muscle with some perivascular localization. The same reaction is present in the interstitial stroma of the kidneys leading to the formation of lines or band-like areas of cellular infiltration. The epithelium of the entire tract is intact, except in a few places where it has been invaded by the lymphoid infiltration.

Examination of the serial sections of these areas shows that these foci are largest in the sub-epithelial tissue, indicating that they had their origin here and only secondarily invaded the deeper portion of the epithelial layer. The experiments of longer duration, as compared with the five-day experiments, show those progressive changes in the inflammatory reaction that are to be expected. The sub-epithelial stroma is proliferated throughout the urinary tract from the bladder to the renal pelvis. The older series are more proliferated than in the fifteen-day experiments. New blood vessels are present and the lymphatic endothelium is proliferated. The focal lymphoid infiltration may be present in the bladder mucosa, in the sub-epithelial tissues of the ureter and pelvis. In the pelvis the infiltration may be diffuse as well as focal. The lymphoid infiltration is most marked at the mouth of the ureter and in the pelvis along the middle third of the ureter there may be, scattered, small foci of perivascular infiltration in the tissues of the outer zone of the ureteral wall.

Comparison of the changes due to the three species of the bacterial organisms used shows in the dogs the most marked reaction after B. coli and the least marked after Staphylococcus aureus, with after B. proteus a reaction intermediate between the other two. The findings are at variance with the usual statement that a pyogenic infection produces a most intense localization.

In the rabbits the same virulent reactions were obtained after B. coli and B. proteus as well as staphylococcus. In the dogs in every case the reaction is characterized by the absence of polymorphonuclear leucocytosis; by diffuse or focal lymphoid infiltration in the early stage, of variable degree, depending upon the organisms; and by moderate proliferation of the subepithelial stroma and of the capillaries in the later stages. Always, even when the changes are slight, the endothelium of the lymphatics reacts by swelling and proliferation, which may continue to such a degree that individual lymphatics may become completely filled with large, irregular polyhedral cells. Common to all the experiments is the intact condition of the lining epithelium of the entire tract. In every case the uretero-vesical and the uretero-pelvic junctions show a greater degree of inflammatory reaction than does the rest of the tract.

DISCUSSION OF CLINICAL APPLICATIONS.

Our work shows that both motile and non-motile organisms are easily transported from the bladder to the kidneys by the lymphatic stream in the ureteral wall. This is not dependent upon the presence of any obstruction of the lower urinary tract, and it occurs even with intact uretero-vesical orifices. This would explain many of the cases of pyelitis and pyelonephritis which complicate a cystitis. When fever and chills occur during the course of an infection of the lower urinary tract, it is now generally accepted that this indicates an infection of the upper urinary tract, a pyelonephritis. Our experiments prove conclusively, we believe, that the path along which this infection travels is first in the bladder in the submucous and perivesical lymphatics, then by way of the lymphatics of the ureter (especially the submucous and peri-ureteral) to the submucous lymphatic vessels of the renal pelvis, and from here by continuity of the lymphatics directly into the network of intrarenal lymphatics, and then beyond this, into the perinephritic tissues (through the communication of the lymphatics of the cortex with those of the true and fatty capsule of the kidney).

Although difficult to prove experimentally, we believe that our work shows that the free anastomosis between the lymphatics of the broad ligament and those of the ureter makes it possible for infection to travel directly from the uterus and adnexa to the ureter, and from here to the renal pelvis of the kidney.

The intensity of the pyelitis in some of our dogs was out of all proportion to the ureteral changes. We believe that the same occurs clinically, and is explained by the slowing up of the lymphatic stream just before it communicates with the lymphatic current within the kidney. We have observed the gradual lessening of the intensity of the reaction the longer the animals lived. This is due to the immunization of the animal toward further infection, unless the intra-vesical inoculation is constantly repeated. The same phenomenon is observed clinically. As the infection in the bladder decreases, the pyelitis improves in equal ratio. This explains why bladder irrigations and supra-pubic or perineal drainage cause a rapid improvement in conditions of urinary sepsis, especially in infected kidneys.

CONCLUSIONS.

1. Anatomical studies have demonstrated the presence of an anastomosing network of lymphatics in the wall of the bladder and of the ureter, communicating above with a similar lymphatic network in the renal pelvis and parenchyma. At its lower end this system communicates also with the lymphatics of the pelvic structures, in both the male and female.
2. Infections of the bladder or lower ureter may reach the renal pelvis or the kidney, either by way of the lumen of the urinary tract or by way of the mural lymphatics.
3. Experimental and clinical evidence indicates that almost complete obstruction to the free passage of urine is necessary for ascent of infection by way of the lumen of the urinary tract.
4. Experimentally we have shown that infection, set up by the simple introduction of bacteria into the bladder without injury or without obstruction, may pass upward by means of the interstitial lymphatics of the ureter.
5. The degree of involvement following the introduction of bacteria into the bladder depends upon the virulence of the organism and upon the susceptibility of the animal. The subsequent tissue reaction may remain limited to the bladder and ureter, it may pass upward to the tissues of the renal pelvis, or even the parenchyma of the kidney itself may become involved.
6. When the kidney tissue is involved in ascending infection brought about experimentally, as described, the path of travel is from the subepithelial tissues of the pelvis to the kidney by way of the inter-tubular and perivascular lymphatics.
7. From the kidney the perirenal tissues may become involved through the capsular lymphatics, which anastomose with those of the cortex.
8. The experimental evidence indicates that, in cases of pyelitis and pyelonephritis in the human, secondary to infection of the bladder, the lymphatics constitute the most important course of upward travel of the infection, especially in those cases where there is no hindrance to the urinary outflow.
9. Pyelitis and pyelonephritis, not secondary

to cystitis, may also be the result of lymphatic transport of infection from the pelvic organs in the male and female, and from the lower intestinal tract.

References.

[1] Jour. A. M. A., Vol. lxvi, February, 1916.

[2] Jour. A. M. A., Vol. lxviii, p. 540, February 17, 1917, and Jour. Med. Research, Vol. xxxv, January, 1917.

DISCUSSION.

Dr. Hugh Cabot: This paper raises a very interesting group of questions which are important. I want to thank Dr. Eisendrath for giving us ample opportunity for going over his material in advance. It is certainly in that way that one gets down to the facts, where you can take a man's work and go over it at your leisure. When any one of us puts out work which is at variance with the work of previous observers he will not object to confirmation.

Dr. Eisendrath's method of producing all these infections is by the injection of organisms into the untraumatized bladder. That is a type of experimental work which has been done for years. There is an immense mass of evidence showing that infection of the bladder and the urinary tract cannot be produced by that method, and I submit that there is an inherent possibility of error at this point. There is clinical and an immense mass of experimental evidence tending to show that by the introduction of organisms into the bladder in the absence of obstruction, whether produced experimentally or existing pathologically, no infection has ever been demonstrated to take place, and I think it is certainly necessary that this work be confirmed and that evidence be produced by other experimenters that it is possible to produce inflammatory lesions of the urinary tract without the production either of trauma or obstruction.

In the production of an inflammatory lesion of the urinary tract such that the lesion can be demonstrated and in which the organisms are recovered from the urine at autopsy, it is necessary to show that in the cases where the organisms are recovered there shall be a lesion in that patient. For example, in Case 401, a dog infected with the colon bacillus, there were no lesions and yet the organism was recovered from the bladder. That is a case that requires explanation. Take also Case 429, a dog with the bacillus proteus. There were lesions in the ureter, pelvis and kidney, and no culture. In one case there are lesions and no growth, and in the other, growth and no lesions. Again, the length of time over which these organisms appear to be recoverable seems to me quite extraordinary.

It is acknowledged that the chronic colon bacillus lesion of the kidney is a pyelitis which connects with the urinary tract. That is the lesion typical of pyelitis and has been so recognized for years. The organisms persist because they grow in the urinary tract, either in the mucous membrane or, in the presence of obstruction, in the urine itself. The characteristic thing about Dr. Eisendrath's lesions is that they are not in contact with the urinary stream and we should not expect to find organisms in culture in the urine.

It is interesting, I think, to trace the cause, the natural history, as one might say, of a case of pyelitis. The early cases have been difficult to find. There is very little pathological material other than experimental material showing the exact nature of the colon bacillus infection, which later may terminate fatally. Now those specimens, as far as I have known of them, have universally shown a pyelitis demonstrated by the organism in the mucous membrane and in infiltration of the mucous membrane, the process having settled there because that is a satisfactory medium for it, whereas the kidney itself is not a satisfactory medium. The organisms enter the kidney from above and infect it. They do not find a location favorable for growth and ultimately arrive at the mucous membrane and do find there a congenial condition, so there they remain. That is, as I believe, the typical cause of colon bacillus pyelitis.

Dr. Eisendrath says that this work shows the transference of organisms from the bladder up along the ureter to the kidney. I submit that no transference is shown. Perhaps he has slides which show organisms, but if so we have not seen them. It seems to me absolutely essential that if it is to be claimed, as he claims, that he has demonstrated the transference through the bladder to the kidney, the organism would be somewhere along the road. Organisms in these lesions must be shown if we are to believe that the organism and the lesion are fastened together.

I understood him to correlate the occurrence of fever and chills in a case of acute pyelitis subsequent to a cystitis with the passage of the organism along the lymphatics. One might suggest that fever and chills are commonly produced by the entrance of organisms into the blood stream, and the colon bacillus has been found in the circulation with great regularity. It is not safe to assume that fever and chills occurring in pyelitis are due to lymphatic infection. They certainly may reach the kidney through the blood stream.

Again, I think one does well to remember that the lymphatic systems of the ureter are exceedingly segmented. There is nothing, as far as I know, approaching a continuous chain of lymphatics for any considerable distance. They leave the region of the ureter and go to the lymph nodes. They must return back along the lymphatics from the nodes to the ureter. It is not a continuous performance, by any means. We must be prepared to assume that they leave the ureter and then see fit to return to the ureter in preference to staying where they are.

Again, we should do well to remember that where, as is shown here, there are areas of definite infiltration about the blood vessels, it does not follow that those are lesions of the lymphatics. We know, in fact, that lesions of the vein will produce that appearance about the vein involved, and that a perivascular infiltration does not by any means show it to be lymphatic and in some cases clearly does show it to be vascular in origin. Undoubtedly organisms leave the vein and reach the lymphatic, and *vice versa*, once having been in a lymphatic, very readily enter blood vessels. It may be readily interrupted at any point in its progress by direct entrance into the vein.

Then finally (and I trespass here slightly on the ground which Dr. Crabtree will cover), lymphatic infiltration is not characteristic of any inflammation known to be produced by the Staphylococcus aureus. It is quite at variance with human microscopic pathology, and is evidence of a chronic and not of an acute lesion.

We must hold that this is an interesting piece of work, that though it shows lesions in the peri-ureteral, peri-vesical and peri-pelvic structures, there is a lack of evidence showing how these lesions are produced, and it has not been demonstrated that these lesions bear any relation to the bladder.

Dr. E. Granville Crabtree: Dr. Eisendrath very kindly brought on with him the pathological material on which this paper is based and left it with Dr. Cabot and myself over the period of the Yale-Harvard game. I have had an opportunity both to read the paper which you have just heard and to go over carefully the pathological material at my leisure.

The material is most interesting. Areas, such as you have seen pictured, of undoubtedly inflammatory nature are found beneath the pelvic mucosa and along the ureter. The infiltrations are almost invariably lymphocytic with, in some cases, a few leucocytes. The areas of infiltration are small with a striking absence of renal lesions of significance. I have failed to find any difference in the character of the lesion produced (pus cell or lymphocyte) when the lesion represents infections of 5-7 days—or that of many weeks. One must then believe that acute coccus infections produce what we must classify pathologically as chronic inflammation.

There are several facts which come to mind which require explanation before the theory of lymphatic infection of these kidneys can be accepted.

One of these points is, that inasmuch as you have to deal with lymph channels, when pus-producing organisms are used as infecting agents, suppurative changes of the regional glands are to be expected. Dr. Eisendrath does not mention whether or not he has noted it. Perhaps these changes exist and have not been noted.

That the Staphylococcus aureus in cases of recent infection produces the chronic type of inflammation in lymphogenous infections is possible, but pus cell changes in hematogenous infections is an inconsistency demanding explanation. That, it seems to me, is a condition which does not approximate the human kidney, which is the lesion we are endeavoring to explain.

Lymphatic involvement of the perivascular tissue, perineum and peritoneum has been shown by many observers to result *quickly* in blood invasion. I do not believe the cultural evidence here presented excludes the blood stream.

Dr. Cabot has brought out a point which is paramount, *i. e.*, the demonstration of relation to the lesions here shown of the organism injected. I refer to staining of bacteria in the tissues.

There is still another point which I wish to mention, which has already been discussed by Dr. Cabot. That is, the absence of evidence of invasion of the urinary stream by the organism. There is some evidence produced to indicate the occurrence of small chronic inflammatory processes invading the mucosa, yet neither from a general involvement of the pelvic and ureteral mucosa, nor from the urine, is there evidence of a lesion similar to pyelitis in the human. This may explain the rather erratic cultural returns from kidney, ureter and bladder.

This work is noteworthy in that it has added one more gravestone to the ascending urogenous theory—a once popular and pernicious theory.

Dr. Eisendrath's work shows possibilities which, I think, can be developed. He has already determined to stop some of the leaks by further work. If the lymphatics are capable of causing renal infection, work along this line will be able to prove it.

We have spoken thus freely, not to appear inhospitable, but because Dr. Eisendrath asked us for a frank criticism of his work.

Dr. John Cunningham, Jr.: I wish only to congratulate Dr. Eisendrath on the excellent piece of work he has done and thank him for bringing it to us for discussion. From the diversion of opinion expressed by others who have given special study to this subject it seems that all that the rest of us can do is to sit as a sort of jury and listen to the discussion of the subject by the two factions.

Dr. G. G. Smith: It seems to me that Dr. Eisendrath's paper does suggest the explanation of certain things which we see occur clinically. For instance, I remember a man who had a seminal vesiculitis in which the Bacillus mucosus capsulatus was the etiological factor, and during the course of treatment for that he developed a kidney infection on the same side. I catheterized his ureter to see what was happening, and I found the same organism coming from the kidney.

Of course, it may have been simply a coincidence. Things like that are unexplained by theory, but if Dr. Eisendrath can put his case on four legs so that it will run, I think that it will explain some of those things which, to my mind, have hitherto been unaccounted for.

Dr. A. L. Chute: Dr. Eisendrath has given us the opportunity of listening to a very entertaining and suggestive paper. I agree with Dr. Smith that some such method of infection as the author has described will explain certain cases that we encounter, better than any other method of infection.

In regard to the question that has been brought up, as to whether or not an infection can travel along the lymphatics of the ureter, I had supposed that this point was pretty well settled some years ago by the work of Stewart and Sweet. It is true that in their experiments the infection entered the lymphatics through the cut end of the ureter and not through the mucous membrane of the bladder, as in Dr. Eisendrath's experiments, but I thought their work proved definitely that an infection could extend up the lymphatics of the ureter. In women, especially, there are infections that do not bear the imprint of the hematogenous infection; there are one-sided renal infections that follow infection of the bladder quite promptly. The element of back pressure is so very slight in women as to make it improbable that these infections are up the lumen of the ureter, though it would be useless to deny the possibility of this. The only other probable methods are by the organisms getting through the bladder mucosa either into the blood stream or into the lymphatics, and one-sided infection is too frequent in such cases to make it seem probable that the infection is always by the blood stream. The importance of the blood-borne infections of the kidney, I think we have all recognized and appreciated for a considerable number of years, but to the minds of many of us it does not satisfactorily account for all renal infections.

I want to thank Dr. Eisendrath for my pleasure in his paper.

Dr. Eisendrath (closing): I certainly thank the gentlemen very much for what they have said. I want to tell you the circumstances under which I am reading this paper here. When we put out our preliminary report it was very brief. It appeared last January in the *Journal of the American Medical Association*, and at that time Dr. Cabot referred to the article and I wrote him about showing him some of my specimens. It is my experience that the only way you can get ahead is to present your argument, and that is the reason I left my specimens at the disposal purposely of Dr. Cabot and Dr. Crabtree in order that they should look at them and have a full opportunity, without being influenced by my presence, of judging for themselves.

They have pointed out some weak points. One of them is that we have not examined the regional lymph nodes, but personally I do not think that is as weak a point as it seems. I do not agree with Dr. Cabot and Dr. Crabtree in saying that the lymphatics are segmental. We know, for instance, that in the case of the common duct or of the cystic duct there is quite a long tube without any intercepting lymph nodes, though there are some at the neck of the gall-bladder and around the junction of the cystic ducts. Another reason why I do not think so is that in examining hundreds of sections we can find in these sections, layer by layer, from the bladder all the way up into the ureter, the areas of infiltration continuous. There is not a single interruption. There is not a single place, in looking at all the sections, of a segment of the ureter. Where you see any infiltration, that would indicate an extension from this sub-mucosa layer out in the peri-ureteral sheath. We are going to repeat a great many of our experiments, and we shall pay particular attention to the lymph nodes.

In regard to the question of lymphatic tissue, our attention was called very early to that by Dr. D. J. Davis, professor of pathology in the University of Illinois. He saw one or two of the sections and marked such areas with a question mark. I called it infiltration and submitted them to him, and he said "No. I think it is normal lymph nodule"; but ever since then we have guarded against judging anything of that kind. They have such a definite anatomical arrangement that they do not look in the least bit like those of lymphocytic infiltration.

In regard to lymphocytic infiltration, that might seem at first glance like a weak point. Yet we did not try to produce infections which would be so diffuse. In cases where we produced infections such as Stewart and Sweet did in their reimplanting they were so diffuse that it was hard to get such pictures as we have. I have had experience with them, and you cannot tell where an infection really started. That was why we tried to work with the organisms and really study the early stages.

I am not enough of a pathologist to be able to say that in the animals the lymphocytic infiltration is characteristic of sub-acute or chronic inflammation as compared to acute, but I am assured by those who are competent that this infiltration does not contradict the possibility of a sub-acute or low-grade infiltration.

Dr. Cabot mentioned the fact of no infection taking place through an intact bladder. Between the epithelial cells of the mucous membrane of the stomach there is a most intact network of lymphatics that runs around between the individual cells of the stomach. When we see such pictures in so many sections we begin to be greatly influenced to assume that infection takes place through this. We know that, for instance, organisms in the mouth will attack an intact mucous membrane and drain into the region of the lymph nodes.

Now, he showed some apparently weak points in my case 401, 15-day experiment, not finding any microscopical indication and yet finding it in the bladder. There seems to be the same thing in the animals that takes place in the human, that is, there seem to be animals which you are not able to infect. There may be a special immunizing process in these animals. The older the animal was the less changes we saw, because the animals would seem to have this immunizing process and would show less reaction.

Dr. Cabot made the statement that the colon bacillus finds a congenial medium for its growth in the pelvis of the kidney and therefore it lodges there. That colon bacillus has to go through the tubules of the kidney. It is supposed to destroy the convoluted tubules and lodge down in the mucous membrane of the pelvis and find a nice place to lodge there. Does that seem rational? When you have as strong a stream as a urinary stream, drop by drop, is there chance for it to find a long enough time to lodge there? It seems to me rational to think that in these cases of ascending infection they go to the lymphatics and that they grow there lying underneath the mucous membrane and then wander through the epithelial cells into the pelvis. It seems to me that of the two mine seems mechanically the more reasonable proposition.

In regard to stains for the micro-organism, we tried very few stains and our technic was faulty, but Dr. Crabtree and Dr. William H. Smith showed me a beautiful method for staining, and we are going to apply it in our future experiments.

The question that Dr. Crabtree also mentioned, that the kidney was seldom involved, does not quite hold water. Out of our total of 11 rabbits there were 6 kidneys which showed changes, and from our total of 26 dogs there were 13 showing changes. That seems a pretty fair proportion, considering that we purposely did not want to produce virulent lesions, and yet in those we found cases where, with the ureter almost completely destroyed, there were changes in the kidney. I want to thank you all for allowing me to present this to you, and for your frank discussion, and I hope to be able to report progress. I am personally convinced that it explains the cases of pyelitis of pregnancy and puerperium and the pyelitis of children better than anything I know of.

* * *

Society Report.

MEETING OF NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

HARVARD CLUB, BOSTON, NOV. 28, 1916.

PRESENTATION OF SPECIMENS, INSTRUMENTS, ETC., AND REPORT OF CASES.

DR. BENNETT OF ARABIA: I apologize for appearing before a medical society of this kind, because I am really simply a surgeon, and have been for ten years a medical missionary in Mesopotamia. It happens that out there we have a great many stones in the bladder, and I have a few specimens here.

Five years ago I brought home about 35 specimens, and left them at the University of Michigan.

I would say that now I gather very few, because we do most of them by lithotomy, except where the urethra is blocked.

These, I think, are interesting simply from the point of view of their size. Probably the Arabs allow them to grow more than the Americans do. These have all been sterilized so I will pass them around. There is one they attempted to crush. I have broken my lithotrite in attempting to crush a big stone like that. In this case the man died, and so did the owner of the second large one. These others I think were more successful. One was removed from a boy about five years of age. In fact, most of these stones were removed from children. I have removed stones from children of two or three years of age, while they were still at their mothers' breasts.

I have a theory that some of these stones are caused by the bilharzia worm. The life history of a bilharzia worm, as we have established it, is that the bilharzia enters perhaps through ingestion, but more probably through the skin of the feet, and the Arabs, who work in the rice and wheat fields, are up to their ankles in mud which is full of bilharzia worms. The poison of this bilharzia is really a sharp horn on its anterior end and probably enters the circulation that way and reaches the liver. There it is found in the portal veins and the mesenteric veins, but there the worm is not fully developed, and in the post mortem they are small. They are more fully developed when found in the bladder and rectum. It seems to have an affinity for the walls of the bladder and rectum, more especially for the bladder, and we have cases coming to us giving symptoms of difficult micturition with blood and mucus and some times chyluria. All this is, I think, probably the cause of a large number of cases of stone in the bladder. We get renal calculi, but they are very infrequent.

If you study the life history of the bilharzia you will find that the male worm has a central fold. This encloses the female worm, which is a long, slim worm, and this lies in that ventral fold and the ova are generated in the walls of the bladder and rectum. These passing out cause the irritation and the fungoid growths which are so common. I have seen great, large, mushy growths which project both from the rectum and from the different fistulae which are found through the perineum, and it is very difficult to heal them. In fact, I do not know that they can be healed unless possibly a change of climate is brought about.

Dr. F. B. Lund, Boston: The chief interest of this specimen of hypernephroma is that it illustrates the large size to which a malignant tumor of the kidney can grow without producing any cachexia. The patient's symptoms consisted of attacks of pain in the right side, with very slight hematuria, and he presented this very large mass.

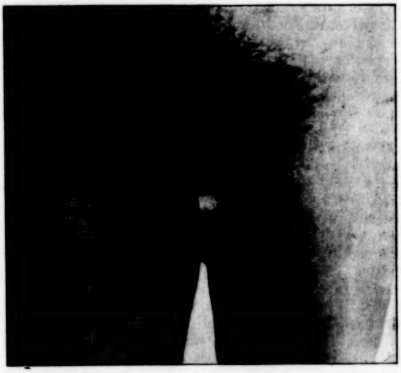
On account of the absence of cachexia, I was inclined to think the mass might be a congenital cystic kidney, although ordinarily you can feel the separate cysts, and this was quite smooth. Dr. Cunningham, who saw the patient with me, thought it was a hypernephroma.

No catheterization of the ureters was done for psychic reasons. Several times he refused operation, and we were in great doubt as to whether we could get him to have it done at all.

The tumor, as you notice, was entirely beneath the kidney and pushed it far up beneath the liver so that the vessels ran upward and backward from the aorta and vena cava, necessitating very wide exposure. The usual long kidney incision was made, and then the lower end of it carried forward, splitting the abdominal muscles, up to and into the sheath of the rectus. This gave a beautiful exposure and there was no difficulty about removing the tumor. The left kidney was of normal appearance and there was no evidence of metastasis anywhere.

A DEVICE TO REPLACE THE RUBBER URINAL.

Dr. John Cunningham, Jr., Boston: I have here a simple device the use of which is to hold urine in the bladder when the bladder sphincter control is destroyed. This device takes the place of the rubber urinal, about the disagreeable features of which nothing need be said. This device compresses the urethra so that no urine may escape, whereby the bladder takes on its normal function as a reservoir. It does not disturb the circulation of the penis. It has been of much service in dilating contracted bladders by enabling the patients to hold the urine after the impulse to urinate has occurred. I have made use of it to hold fluid in the bladder in doing suprapubic prostatectomy.



Incontinence Clamp in Position.

The device was first made for a patient upon whom I resected about one-third of the bladder and removed the prostate for carcinoma three years ago, in which patient the sphincter control was lost by the use of the actual cautery. His bladder, when the device was first employed, could be distended only to three ounces. He now holds seven ounces. The device has taken the place of the rubber urinal in all cases of incontinence which have come under my care since that time. It is sold by Mr. Charles R. Bard.

A CASE OF TUMOR OF THE TESTICLE.

Dr. R. F. O'Neil, Boston: This specimen which I present is one of the so-called mixed tumors of the testicle. It was removed in April of this year. The patient had had it for a year and a half. The specimen at the time of removal was very much larger than it is now, and was also accompanied by a certain amount of hydrocele. At that time there were no metastases to be made out, but the operation was undertaken simply to remove this very large mass, without the idea of effecting a cure. I saw him again a week ago and there was a very extensive recurrence in the pelvis and in the groin. He is now being treated by radium and the x-ray.

A CASE OF CALCULOUS PYONEPHROSIS.

I wish to show this kidney which I removed this morning from a man 40 years of age. He has had symptoms for about a year and a half, although the lesion must have been present for a much longer time. You see the calculus, while not very large, is situated at the uretero-pelvic outlet, blocking the ureter, and has resulted in the complete destruction of the kidney. This kidney was situated high up under the ribs and was removed with difficulty. During its removal the renal vein either was torn or slipped from the clamp and we had a very sharp hemorrhage, which, fortunately, we were able to control.

SOME UNUSUAL URETERAL CALCULI.

These three calculi were removed from the ureter of a young man of about 25. You notice they are smooth and triangular, resembling teeth. The points of interest in this case are the enormous dilatation of the ureter which was present, the very good function of the kidney and the comparative absence of symptoms, together with the normal cystoscopic appearances of the ureter. If you notice, one of the x-ray plates shows two of the shadows apparently low in the ureter with a third up in the kidney region. Another plate shows all three shadows low in the ureter. The third plate, of the ureter injected with argentide solution, shows the enormous dilatation of the ureter which was present. Of course this was suspected, but I did not expect to find it to such an extent, in view of the perfectly normal cystoscopic appearance of the ureteric orifice. At operation the ureter was found much thickened and dilated; it was opened above the pelvic brim and stones removed with forceps. Incision in the ureter closed with a double row of stitches. Wound healed by first intention, never was there any leakage. Examination of the calculi showed them to be calcic oxalate.

Dr. Lesley H. Spooner, Boston: I wish to report on some bacteriological work which has been doing on renal tuberculosis.

Thanks to Dr. Chute and Dr. Crosbie, I received kidneys after operation *in toto*. They had not been mutilated for the sake of gross observation and for this reason I was enabled to get what I believe to be pure growth from these kidneys.

In all I have studied twelve kidneys, three of which were non-tuberculous and nine tuberculous, and I was able to grow in pure culture from six of them the tubercle bacillus. In three others no growth has appeared, although in some it is expected. In none of these nine tuberculous kidneys was I able to grow in any form any bacteria other than the tubercle bacillus. In the three non-tuberculous kidneys which were removed, two for stone and one for a septic process with a sinus, I grew pure cultures of pyogenic organisms. In two cases where the tubercle bacillus was later grown from the kidney, ureteral specimens showed no growth on ordinary culture media, but in both instances acid-fast bacilli were demonstrated microscopically. Strangely enough, from these cases I did grow from the bladder catheter specimens various organisms such as the staphylococcus and diphtheroids.

I advance as a tentative conclusion from this work that the tubercle bacillus may be grown in pure culture from many tuberculous kidneys; that in no instance were other organisms grown; and that tuberculous caseation is due to the action of the tubercle bacillus alone. The bladder urine in cases of renal tuberculosis may contain other organisms, while that from the ureter does not seem to be contaminated. Sufficient work has not been done to make the last two statements with certainty, however, and further experiments are to be performed as soon as possible.

I will say one word as to the method of procedure. The kidneys were delivered to me without being opened, the ureters tied off and the kidneys wrapped in sterile gauze from the operating table. I got them within two or three hours after operation. They were opened on a flat surface and scarified immediately with a red hot plumber's soldering iron. All work was done with instruments which were heated to a red heat in the flame and then cooled in boiled water, so that there was no chance of contamination. There was no possibility of killing the organisms by transmitted heat, and yet there was every chance of getting the material in its natural state. A wide variety of aerobic and anaerobic culture media was employed. It was found that the tubercle bacillus in primary culture was more profuse upon Doret's egg media; but that secondary growth flourished readily upon glycerine agar. (Photographs of the cultures upon the latter shown.)

DISCUSSION OF DR. SPOONER'S REPORT.

Dr. D. N. Eisendrath, Chicago: This subject interests me greatly. I had been considerably interested in cases of so-called mixed infection with tubercle bacilli. I am just recalling a case which occurred last winter in a young man 20 years of age who had been sick only 10 days. His clinical symptoms were those of ordinary acute hematogenous infection. I cut down upon the kidney and found a cortical abscess, and had some pus sent down to the laboratory immediately. They found the Staphylococcus aureus in pure culture. We had not suspected tuberculosis because the temperature was not typical. The urine was clear, and I was very much surprised when the laboratory reported that in addition to the Staphylococcus aureus they found tubercle bacilli in large quantity.

We took out the kidney the following week and it confirmed the diagnosis of a mixed infection, the Staphylococcus aureus predominating.

◆

Book Reviews.

Social Diagnosis. By **Mary E. Richmond**. New York: The Russell Sage Foundation. 1917.

This volume, based on the author's personal experience in charitable and social service, and issued as a publication of the Russell Sage Foundation, is intended as a textbook on social work in Canada. Its genesis and evolution are described in the preface. The text is divided into three parts, dealing, first, with the methods of obtaining, compiling and studying social evidence; second, with the processes leading to social diagnosis; and third, with the variations in these processes necessitated in the study of certain special groups of cases. The second part, which constitutes one-half the volume, deals in detail with the methods and steps of investigating families and individuals and the use of different sources of information and control in dealing with them. The third part consists largely of detailed series of questions useful in approaching special types of cases. The book is an elaborate treatise on the technic of social investigation and, as such, should prove useful to all concerned in this form of activity.

State Board Questions and Answers. By R. MAX GOEPP, M.D. Fourth Edition, revised. Philadelphia and London: W. B. Saunders Company. 1917.

THE second edition of this useful work was reviewed in the issue of the JOURNAL for July 27, 1911 (Vol. clxv, p. 141); and the third edition in the issue of April 2, 1914 (Vol. clxx, p. 553). In this fourth edition considerable new material has been added, particularly with regard to the newer laboratory tests in the study of diseases of the kidneys and disturbances of metabolism. Additions have also been made in regard to the practical application of serologic tests in diagnosis and treatment. The text is brought to date by the gathering and synthesis of many new questions from state board examinations of recent years. The volume should continue its effective value for students and teachers concerned in the preparation for these examinations.

Case Histories in Obstetrics. By ROBERT L. DENORMANDIE, A.B., M.D., F.A.C.S. Second Edition. Boston: W. M. Leonard. 1917.

THE first edition of this volume in the Case History Series was reviewed in the issue of the JOURNAL for February 18, 1915 (Vol. clxxii, p. 365). In this second edition, several alterations have been made for the purpose, as the author states in his preface, of clarifying the meaning of the text, though it should not seem, from the excellent and detailed style of the original, that changes for this reason were necessary. The sections in which the most material alterations have been made are those on accidental hemorrhage, sepsis, pyelitis and scopolamine-morphine anesthesia. Some material has also been introduced on the use of nitrous oxide in obstetrics and further data are given on the subsequent history of some of the cases. These additions, representing the development of the subject in the author's experience, increase the already established value of his work as a contribution to the teaching and practice of obstetrics.

***A Manual of Pharmacology*, and its application to Therapeutics and Toxicology. By TORALD SOLLMANN, M.D., Professor of Pharmacology and Materia Medica, Western Reserve University, Cleveland, Ohio. Octavo of 901 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1917. Cloth, $4.50 net.**

The author's division of his monumental labors into a laboratory guide of pharmacology and a manual containing eight hundred and eighty-seven pages of text, including a bibliography, is to be heartily commended.

The manual possesses the greatest value for physicians, in that most of the ineffective drugs are frankly omitted or mentioned in a few lines of fine print, while the more important ones, which have been proved effective, by careful scientific observation, are given their deservedly prominent position. The author does not look with favor upon the conversion of the old term "cubic centimeters" to "milliliters" as recommended both by the United States and British pharmacopeias.

The section devoted to prescription writing is simple, easily understood and in a brief perusal, with some study, ought to equip the student for correct prescription writing.

The section on ferments presents the modern view with regard to the inefficiency of the therapeutic use of digestive enzymes, as well as the ample destructive action of one upon another. The author also explodes the theory of the use of pancreatic preparations in diabetes which physicians have already looked on with suspicion, though they have had no absolute proof of their lack of efficiency.

The viburnums, too, long employed by the medical profession, have received their death warrant at his hands.

A remarkably able discussion of anaphylaxis is given on page three hundred and sixty-nine, which includes all of the modern views on this obscure subject.

The discussion of the action of digitalis on the heart in health and in disease brings light on many obscure activities of this drug, and will check not only its indiscriminate use, but particularly, its abuse in cardiac stenosis.

The section on the action of dilute hydrochloric and other aids on digestion and pyloric control, adds much to our present knowledge, correlating all of the discoveries made within the last few years.

Many a physician's firm reliance on certain drugs and preparations will receive a rude shock at the hands of this author, who confirms every statement of incredulity in their efficacy by the unquestioned proof of experimental investigation. On the whole, no work has appeared in recent years on which the physician may rely with greater security.

THE BOSTON
Medical and Surgical Journal
Established in 1812

An independently owned Journal of Medicine and Surgery published weekly under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, JULY 5, 1917

EDITORS
ROBERT M. GREEN, M.D., *Editor-in-Chief*
GEORGE G. SMITH, M.D., *Assistant Editor*
WALTER L. BURRAGE, M.D. *For the Massachusetts Medical Society*

COMMITTEE OF CONSULTING EDITORS
WALTER B. CANNON, M.D.
HARVEY CUSHING, M.D.
DAVID L. EDSALL, M.D.
REID HUNT, M.D.
ROGER I. LEE, M.D.
ALLAN J. MCLAUGHLIN, M.D.
ROBERT B. OSGOOD, M.D.
MILTON J. ROSENAU, M.D.
EDWARD C. STREETER, M.D.

ADVISORY COMMITTEE
EDWARD C. STREETER, M.D., Boston, *Chairman*
WALTER P. BOWERS, M.D., Clinton
HOMER GAGE, M.D., Worcester
JOEL E. GOLDTHWAIT, M.D., Boston
LYMAN A. JONES, M.D., Boston
ROBERT B. OSGOOD, M.D., Boston
HUGH WILLIAMS, M.D., Boston
ALFRED WORCESTER, M.D., Waltham

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

An editor will be in the editorial office daily, except Sunday, from twelve to one-thirty p. m.

Papers for publication, and all other communications for the Editorial Department, should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish one hundred reprints free to the author, upon his written request.

The Journal does not hold itself responsible for any opinions or sentiments advanced by any contributor in any article published in its columns.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

TUBERCULOSIS IN THE ARMY.

THE problem of tuberculosis, like many others at this time, takes on a new aspect under the conditions of war and military duty. The appalling spread of pulmonary tuberculosis among the French troops has created a grave problem of public health in France, and the large incidence of the disease in the Canadian army has caused no little concern to military and sanitary officers. Not a few alarmists have predicted the same wholesale infection and destruction of our own troops. On careful consideration of all the facts, however, it becomes clear that much of the disease in the French army was due to the fact that many of the men were already tuberculous when sent to the front. The terrible need for every man who could be mobilized, forbade any examination for more than obvious physical incapacity to carry a rifle. Thousands who in any less haste would have been rejected were passed, to their own speedy breakdown. These, under the forced intimacy and hardship of trench life, became a menace to fellow troops. Some part of the Canadian problem had a similar basis in lack of thorough appreciation that military duty in the field requires a degree of physical health much greater than for active work in civil life. In the examinations made for enlistment in the National Guard in this country, and for the Reserve Officers Corps, this fact has not always been recognized.

The army authorities, appreciating both aspects of this problem, have determined on a scheme by which they hope to prevent, as far as possible, this wastage of men, both as troops and as civilians, and to avoid the future cost in pensions. They plan to have every man now in service in the army, the Reserve Officers' Camps, and the National Guard, as fast as called into federal service, reëxamined by men trained in correct methods of physical examination, to eliminate cases of active or obvious pulmonary tuberculosis.

For this work they ask the volunteer services of experienced physicians, trained in careful chest work. These men are to be commissioned as lieutenants in the Medical Corps and receive pay as such. They will be sent to the various army posts and camps, as far as possible, in their immediate territory, to save cost of transportation and the delay of travel. In view of the special and restricted nature of the service, the rigidity of physical examination required for regular commissions will be remitted and the age limits extended.

That the best men possible may be secured, the service will be made temporary, and men accepting it may be released at the end of three months, though it is desired to have them serve longer. For these reasons of limited service, commissions will be given only as lieutenants, higher rank as due to age or professional standing not being possible.

The work is to be expedited by having an adequate group of such officers sent to each post and camp at once, by July 1, as far as possible. It is desired to examine the enlisted men in posts and the officers at reserve camps at once. Following this, the personnel of the National Guard next to be called into service will be reviewed, and the way cleared to the new national army as fast as it is selected and sworn in.

It is not expected that this will prevent all tuberculosis in our forces, but it is hoped to reduce greatly its development. No army could be raised if every latent or possible future case of tuberculosis were rejected. But by a careful reëxamination of the chests by men of experience it is hoped to hold down the incidence to a minimum.

The appreciation of the signs of an active incipient case of tuberculosis is not yet the common possession of every physician, and the realization of the physical requirements to meet the strain of military service rarely part of the knowledge of the civilian practitioner. Through these two gates of ignorance pass the greater number of cases of tuberculosis in our army. To guard from the start the source of trouble, and to find at once the cases which have slipped past, before length of service even in camps of training, raises the question of "disability acquired in line of duty," and to prevent further acceptance of known cases of tuberculosis, is the great purpose of this work.

Its value in preventing serious ineffectiveness in the fighting ranks, in saving to useful civil, working power the incipient case which would otherwise suffer from the over-physical strain of war, and in reducing the future cost of pensions, is beyond estimation.

It is a service which should receive the heartiest support of the medical profession. Its success will depend on the type of men who respond to the call. It is a rare opportunity for those of exceptional skill and experience to give for a brief period the best of help. Many, who for reasons of duty or age, cannot follow their desires into the field in line or hospital, can here rejoice in a chance to serve usefully and wear the honor of their country's uniform.

MEDICAL NOTES.

Honorary Degrees to Physicians.—At the commencements of the various American universities last month, several honorary degrees were conferred upon physicians as follows: At Yale the degree of Sc.D. was conferred on Dr. Theobald Smith, director of the department of animal pathology of the Rockefeller Institute. Dr. Smith and Dr. Charles H. Mayo, retiring president of the American Medical Association, also received the same degree from Princeton. At Bowdoin the honorary doctorate in science was conferred on Dr. Fred H. Albee of New York, who has recently returned from service at a base hospital in France.

Health Conditions in South America.—Dr. Richard M. Pearce, professor of research medicine in the University of Pennsylvania, has returned from a tour of three months through Brazil, Argentina and Uruguay to make a study of the medical, hospital, educational and public health conditions in those countries in the interest of the International Health Board of the Rockefeller Foundation.

Medical Research.—The General Education Board founded by John D. Rockefeller has donated a million dollars to Washington University, St. Louis, to be used in research in the subjects of surgery, medicine and pediatrics.

Health Report, Montclair, N.J.—According to the recently published twenty-second report of the Board of Health of Montclair, N. J., the mortality rate for the past year was 10.56 per thousand inhabitants. The chief causes of death were organic diseases of the heart, pneumonia, cancer and tuberculosis. The deaths due to cancer represent an increase of 100% over those of fifteen years ago.

Prevalence of Disease in the United States.—The weekly report of the United States Public Health Service for June 1, 1917, states that during the month of April there were reported in Mississippi, 7222 cases of malaria, 961 of pellagra, 221 of smallpox, and 188 of typhoid fever. During the same period there were 206 cases of cerebro-spinal meningitis in Pennsylvania, 94 in Minnesota, 25 in Kansas and 14 in Indiana. There were 15 cases of poliomyelitis in Pennsylvania, 246 of smallpox in Minnesota and 89 of typhoid in Indiana. There were 496 cases of smallpox in Indiana and 303 of typhoid in Pennsylvania.

In the weekly report of June 8 it is further noted that during the first five months of 1917 there were 274 cases of cerebro-spinal meningitis in Minnesota with 113 deaths. There were eighty cases of the disease in Connecticut in April. During that month there were 445 cases of malaria in Virginia, 108 of pellagra in Alabama, 572 of smallpox in Arkansas and 74 of typhoid fever in Montana.

London Death Rates in April.—Statistics recently published show that in April, 1917, the total death rate of London was 18.2 per thousand inhabitants living. Among the several districts and boroughs the highest rate was 22.3 in St. Pancras, a populous northern area, and the lowest was 13 in the financial district of the city.

Prevalence of Meningitis.—The weekly report of the United States Public Health Service for June 15, 1917, states that during the month of April, 149 cases of cerebro-spinal meningitis were reported in Ohio. During the year 1916 there were 327 cases of this disease in New York, 162 in Pennsylvania, 152 in Ohio and 150 in Massachusetts.

WAR NOTES.

LONDON CHAPTER OF AMERICAN RED CROSS.—There has been formed in England a London Chapter of the American Red Cross. One of the first acts of the Chapter was to plan for the establishment of headquarters for American nurses in the war zone. The chairman, Mrs. Whitelaw Reid, said that it would be a home where nurses could go when on leave from their duties in France and where those passing to England from the United States would find accommodations.

GIFT OF FORD AMBULANCES.—The Ford Motor Company, in a meeting of its directors, voted to donate $500,000 worth of Ford ambulances to the Red Cross.

AID TO RUSSIA.—The American Red Cross has arranged to send an American commission to Russia to work behind the battle front in the same way as the commissions work in France and Belgium. This will enable the Red Cross to send its supplies and relief corps to the Russian front.

APPOINTMENT TO WAR COUNCIL.—The appointment has been announced of Dr. Charles V. Chapin of Providence, R. I., to the War Council of the American Red Cross. The council consists of a commission of ten to advise on matters relating to the European War relief and army health. Simon Flexner of New York will be chairman of the commission, and Dr. Milton J. Rosenau will be another of its members.

PUBLIC HEALTH NURSES TO REMAIN AT HOME.—The Instructive District Nursing Association of Boston has drawn up resolutions to the effect that public health nurses are most needed at their posts at home, on the ground that the public health nurse is helping to conserve the most precious of national resources, human life, and is serving her country no less than the nurse at the front. These resolutions are indorsed by the Massachusetts Committee of Public Safety, the Massachusetts Commissioner of Public Health and the Executive Committee of the Massachusetts Committee of Directors of Visiting Nursing Associations.

ADDITIONAL EQUIPMENT FOR BASE HOSPITAL No. 5.—The additional workers asked for by Major Harvey Cushing of Base Hospital No. 5 have been recruited and will go to France as soon as possible. They include forty men, twenty nurses and five doctors.

APPOINTMENTS FOR SERVICE IN FRANCE.—The American Red Cross has appointed Dr. Alexander Lambert of New York as medical adviser to the War Relief Commission of the Red Cross during the war. Dr. Tom A. Williams of Washington will go to France as neurologist in the French Service de Santé.

CALL OF THE MEDICAL DEPARTMENTS OF THE NATIONAL GUARD.—The officers and enlisted men of the medical corps of the National Guard units in New England have been called to the South to undergo three month' course in instruction at the medical department training camp at Fort Oglethorpe, Ga. There will also be sent a number of officers and enlisted men of the sanitary troops connected with the regiments already in Federal service to Fort Ethan Allen, Vt., for a similar course in instruction. The men chosen for the Oglethorpe camp were all picked out in Washington and the list forwarded to department headquarters and to the adjutants-general of the several states.

Massachusetts has fifteen officers and forty-six men; New Hampshire, five officers and thirteen men; Maine, two officers and four men; Connecticut, six officers and twenty-one men, and Rhode Island three officers and thirteen men. These men were mustered into the Federal service and were ordered to report at Fort Oglethorpe on June 25. The Massachusetts men will be under the command of Major George F. Keenan.

ENTERTAINMENT OF CHICAGO UNIT.—The Red Cross Base Hospital recruited from Chicago has been enthusiastically received and entertained in London. On one occasion Sir Thomas Lipton invited the unit to his country place. Among the guests were Dr. Richard P. Strong of Harvard and the Italian bacteriologist, Dr. Castellani, both of whom were associated with Sir Thomas Lipton in combating the typhus plague in Serbia. Dr. Strong addressed the company and spoke highly of the work inaugurated by Sir Thomas Lipton in Serbia and expressed appreciation of the aid given the American Red Cross.

FRENCH WAR CROSS TO AMERICAN.—Dr. George Dock, professor of medicine in the medical school of Washington University, has received the French war cross and has been mentioned for his service in moving wounded soldiers under heavy bombardment while engaged in the American Field Ambulance Service.

APPEAL FOR SURGICAL DRESSINGS FUND.—The Surgical Dressings Committee again appeal to the public for contributions to their work. The dressings prepared by the committee at the Peter Bent Brigham Hospital and its branches are done so well and are so much depended upon by many hospitals abroad that any decrease in their supply would be a calamity in the present crisis.

An indication of the extent of the work of the committee (and the value of this work to the Allies) is found in its report of shipments in May, which amounted to 601 cases, containing 814,719 dressings. This was an increase of 181,431 dressings over March—the next highest month.

All subscriptions should be made payable to the Surgical Dressings Committee and forwarded to the Old Colony Trust Company, 17 Court street, Boston.

Berkshire Ambulance Unit.—The Berkshire Ambulance Corps of eighty-six men has been mustered into Federal service. The unit is led by Dr. R. J. Carpenter of North Adams and consists of twelve automobile ambulances furnished by the citizens of Berkshire County.

Hospital Supplies for the French.—The New England branch of the American Fund for French Wounded has sent in the last month 194,533 surgical dressings to France. Besides these the shipments included 14,800 yards of surgical gauze, 1,020 pounds of absorbent cotton, 1,100 pounds of chloroform and ether, 1,500 yards of adhesive plaster, 2,737 yards of mosquito netting, 9,063 hospital garments, 12,114 towels, wash cloths and handkerchiefs and large quantities of many other useful and necessary articles. The Branch appeals for absorbent cotton and surgical gauze both of which are difficult to obtain in France and the need of which is most urgent.

Commission to Study Battle Conditions.—A commission headed by Major Hugh-Hampton Young, M.R.C., director of the Brady Institute of Johns Hopkins Hospital has left this country for England to study medical necessities at the battle front and to take charge of the medical care of the American Army in France.

Dr. Young will be accompanied by Captain Louis C. Lehr, of Georgetown University, Captain Montague L. Boyd, of Emery College, Atlanta, and Lieutenant Howard L. Cecil, of the Brady Institute, Johns Hopkins Hospital.

Surgeons in Training Camp.—The following officers and men have been chosen by Colonel Frank P. Williams, surgeon-general of the National Guard of Massachusetts to attend a three months' training camp at Fort Oglethorpe, Ga. They are Lieutenant William H. Barrow, First Field Hospital Company; Captain James F. Coupal, Coast Artillery; Lieutenant Joseph H. Dunn, Coast Artillery; Lieutenant Gustave P. Grabfield, First Ambulance Company; Lieutenant Albert A. Horner, First Regiment Field Artillery; Lieutenant Herbert L. Johnson, Fifth Infantry; Major George F. Keenan, office chief surgeon; Lieutenant Eugene J. McCarthy, Second Ambulance Company; Lieutenant Peter G. McKenna, First Ambulance Company; Lieutenant Harold F. Parker, Second Field Hospital Company; Lieutenant Ruel A. Pierce, First Field Hospital Company, Lieutenant James J. Rodger, Second Field Hospital Company; Lieutenant Edward B. Sheehan, Second Ambulance Company; Lieutenant Conrad Wesselhoeft, Eighth Infantry; Lieutenant James J. Walsh, Fifth Infantry.

American Units in France.—The American Red Cross units from St. Louis and Philadelphia, numbering in all about four hundred persons, have left England for France. Each unit will care for five hundred beds.

War Relief Funds.—On June 30 the totals of the principal New England war relief funds reached the following amounts:

French Wounded Fund	$235,303.52
Armenian Fund	197,104.79
Serbian Fund	122,638.66
Surgical Dressings Fund	103,488.47
British Imperial Fund	101,737.59
Metropolitan Red Cross Fund	72,576.79
French Phthisis Fund	67,469.33
Italian Fund	42,549.37

BOSTON AND MASSACHUSETTS.

Brockton Health Conditions.—The Department of Public Health of the City of Brockton has recently issued its thirty-fifth annual report, which covers the year 1916. The mortality rate during this period was 11.92 and the infant mortality rate was 90.2. There were 1,541 births registered of which 70 were stillbirths. Deaths under a year totaled 138. Immediately upon receipt of the birth return, a circular and Baby Book are mailed to the mother in regard to necessity for reporting any redness, swelling or discharge from the eyes of the infant. Three baby clinics were maintained during the summer at Baby Hygiene stations where demonstrations and instructions were given by nurses and advice and treatment by doctors. The total attendance at these clinics was 752, which meant a total of individual babies of 247. Following the clinics the nurses visited the babies in their homes, and in all 696 visits were made.

Northeastern Dental Society.—The members of the Northeastern Dental Society held an outing at Baker's Island, near Salem, Mass., on June 20. A clambake and athletic events were the features of the occasion.

Dental Alumni Association.—The Harvard Dental Alumni Association held its forty-sixth annual meeting and dinner on May 22. The following officers were elected for the coming year: Dr. Frank T. Taylor, president; Dr. J. William O'Connell, secretary; Dr. John W. Estabrook, treasurer.

NEW ENGLAND NOTES.

Poliomyelitis in Vermont.—On June 28th, a total of 16 cases ofpoliomyelitis had developed in Vermont. Two cases were in Waitsfield, two in Barre and 12 in Montpelier. Three of the victims were children and the others were under twenty years of age. Two suspicious cases are being watched in Montpelier, where all public assemblies have been forbidden.

The Massachusetts Medical Society.

PROCEEDINGS OF THE SOCIETY.

First Day, June 12, 1917.

Clinics and demonstrations were held during the morning at the principal hospitals of Boston. All of the exercises of the anniversary were held at the Copley-Plaza Hotel, Boston, beginning with the annual meeting of the Supervisors, June 12, at 11.30 a.m., in the foyer, followed by the annual meeting of the Council in the same room, at noon, 126 Councilors being present. Meetings of the Sections of Medicine, Surgery, Tuberculosis and Hospital Administration, the last being a new section this year, were held in the afternoon in the different rooms of the hotel; a detailed and corrected program of the meetings and the officers is to be found in the Boston Medical and Surgical Journal for June 7, 1917, Vol. clxxvi, pages 822-824.

The following officers of the sections were elected for the ensuing year by the sections:

Section of Medicine: *Chairman*, William H. Smith, Boston; *Secretary*, George R. Minot, Boston.

Section of Surgery: *Chairman*, John Homans, Boston; *Secretary*, Hilbert F. Day, Boston.

Section of Tuberculosis: *Chairman*, Walter G. Phippen, Salem; *Secretary*, John B. Hawes, 2d, Boston.

Section of Hospital Administration: *Chairman*, Homer Gage, Worcester; *Secretary*, Channing C. Simmons, Boston.

The Shattuck Lecture was delivered in the evening by Dr. David Cheever of Boston, who read the lecture prepared by Dr. Walter B. Cannon, George Higginson Professor of Physiology in the Harvard Medical School, Dr. Cannon being absent in the service of the country in the war. Subject: "The Physiological Factors Concerned in Surgical Shock."

Following the lecture there was a reception to the President and a concert and refreshments.

Second Day, June 13, 1917.

The Society met at the Copley-Plaza Hotel, Boston, for the exercises of the one hundred and thirty-sixth anniversary. The President, Dr. Samuel B. Woodward of Worcester, was in the chair and about a hundred Fellows were present during the morning. The minutes of the last meeting were read and accepted. The Secretary announced that during the past year the Society had lost by death 53 Fellows, by resignation 24, by deprivation of the privileges of fellowship 61, total loss 138. The Society had gained 171 Fellows as follows: restoration by the Council 4, readmitted by the Censors 2, new Fellows 165, total net gain 33, making the membership of the Society, June 13, 1917, 3666.

Dr. G. P. Twitchell explained in detail the following amendments to Chapter V of the By-Laws, that had been submitted to the Council, October 4, 1916, by the Supervisors:

Page 17, Section 1 (*Board of Supervisors*), line 7, to follow the word "board," this sentence: He shall call special meetings at the request of five supervisors.

Same page, same section, third paragraph (*Diplomas of colleges not on list*), add at end of paragraph, deleting the period, the following: by the district secretary before an applicant is permitted to take an examination.

Same page, same section, last paragraph (*Examinations; when held*), second line, delete "at 2.00 p.m."; also next line, change the word "second" to "first" in the two places where it occurs.

Page 18, Section 2 (*How applications are made*), first line, substitute the word "fellowship" for the word "examination."

Same line, after the word "apply," insert the following: on blanks furnished for the purpose. . .

Same section, end of second line, delete the semicolon and add the following: at least one week before the date of a given examination.

Same page, Section 3 (*Duties of district secretaries*), second line, to follow the word "censors," add the following: shall furnish applicants with blanks adopted by the board of supervisors; they. . .

No objection being made to considering all the amendments *en bloc*, they were passed unanimously.

The Chairman read the following amendment to Chapter VI of the By-Laws that had been submitted to the Council February 7, 1917, by the Standing Committee on Membership and Finance:

That the fourth paragraph of Chapter VI, Section 4, be amended so that it shall read: He shall attend the meetings of the Committee on Membership and Finance, furnish the committee with such data on membership and finance as the committee may require, and shall make all investments and reinvestments of the Society's funds subject to the approval of this committee.

The Treasurer stated that he thought the amendment a desirable one and favored its passage, and it was passed with no negative votes, twenty-five Fellows being present.

Dr. Edsall introduced this preamble and these resolutions, and moved their adoption:

Whereas, Senate Joint Resolution No. 63 has been introduced into the Senate of the United States with a view of controlling certain sanitary conditions in this country incident to our state of war, and has been endorsed by the Council of National Defense and all its subsidiary organizations, including the Medical Corps of the Army and Navy, the Treasury Department of the United States, and the executive officers of forty-three State Boards and Departments of Health assembled in conference, therefore, be it

Resolved: That in the opinion of the Massachusetts Medical Society this Resolution should be speedily enacted into law as offering a practical means for joint administrative control by Federal, State and local authorities of sanitary conditions beyond the jurisdiction of the military authorities, arising in connection with the establishment of military camps, and for controlling other extraordinary conditions incidental to a state of war, and be it further

Resolved: That the President and Secretary of this Society be directed to transmit copies of this Resolution to the Senators and each of the Representatives in Congress from the Commonwealth of Massachusetts.

After some questions had been asked and answered the resolutions were adopted by a unanimous vote.

Dr. Cook presented the following resolutions and they were passed:

Resolved: That in the belief of the Massachusetts Medical Society the public health would be greatly benefited by the restoration of the regulations concerning venereal prophylaxis that were abolished by the Secretary of the Navy, therefore it is

Resolved: That the Secretary of the Navy be urged to restore these regulations in the Navy, and that the Massachusetts Senators and Representatives in Congress be requested to coöperate in bringing this about.

The President announced the names of the committee of five he had appointed "to look into the matter of an academic chair of Military Medicine in this Commonwealth," in accordance with a resolution passed by the Council the previous day, as follows:

E. H. Bradford, *Chairman*, E. C. Streeter, A. N. Broughton, P. P. Johnson, P. E. Truesdale.

The President read the resolution that had been passed at the annual meeting of the Council, placing the Society on record as in favor of prohibition for the duration of the war, and it was adopted unanimously, and another resolution, passed at the same time, namely, be it

Resolved: That the Massachusetts Medical Society emphatically urges its members, especially the younger men, to offer their services to the Medical Reserve Corps of the United States Army; and it was adopted.

Papers on Certain Aspects of the Hazards of Industry were read, according to the program as printed in the Boston Medical and Surgical Journal, June 7, 1917, except that Dr. Edsall summarized and included in his remarks the paper that was to have been read by Dr. Wade S. Wright, who had been called away in the service of the country. Discussion of all the papers was participated in by Dr. A. N. Broughton, Dr. J. J. Minot, Dr. Eugene J. McCarthy and Mr. Edwin Mulready. On motion by Dr. Albert Evans it was

Voted: That the Council be asked to appoint a special committee to work in coöperation with the State Board of Labor and Industries.

At noon the Annual Discourse was delivered by Dr. P. E. Truesdale of Fall River. Subject: "Military Medicine; a Means to Perpetuate Its Teaching in Massachusetts."

In the afternoon the Combined Sections of Medicine and Surgery met in the salon of the hotel and listened to six papers and discussions, as set forth in the program as printed in the Boston Medical and Surgical Journal for June 7, 1917.

The Annual Dinner was served in the ballroom in the evening to 690 Fellows and guests. Grace was said by the Rev. Austin S. Garver. The President made an address and also acted as anniversary chairman, introducing as speakers, the Hon. Calvin Coolidge, Lieutenant-Governor of Massachusetts; Major F. F. Simpson, of the Medical Board of the Council of National Defense; Major H. D. Arnold, of the Medical Officers Reserve Corps; Dr. A. J. McLaughlin, Health Commissioner of Massachusetts; the Rt. Rev. William Lawrence, Bishop of Massachusetts; and President A. Lawrence Lowell of Harvard.

Adjourned at 10.20 p.m.

WALTER L. BURRAGE,
Secretary.

DEATHS REPORTED FROM JUNE 7, 1916, TO JUNE 13, 1917.

Admitted.	Name.	Place of Death.	Date of Death.	Age.
1880	†Abbott, Stephen Wendell,	Waverley	Sept. 1, 1916	66
1908	Barrows, Sterling	Worthington	Aug. 16, 1916	36
1876	Bell, William Appleton	Somerville	Apr. 3, 1917	65
1872	†Blodgett, Albert George	Ware	Feb. 10, 1917	75
1881	†Brown, Francis Henry	Boston	May 16, 1917	81
1916	Buck, Charles Edward	Boston	May 11, 1917	58
1874	Buckingham, Edward Marshall	Boston	Dec. 23, 1916	68
1877	Cunningham, Thomas Edward	Cambridge	Feb. 27, 1917	66
1875	†Cushing, Ernest Watson	Boston	Aug. 27, 1916	69
1856	†Cutter, Ephraim	West Falmouth	Mar. 7, 1917	84

Admitted.	Name.	Place of Death.	Date of Death.	Age.
1899	Davis, Percy Guy	Deerfield	Oct. 20, 1916	49
1914	Dodd, Walter James	Boston	Dec. 18, 1916	46
1879	Eaton, Willis Gilbert	Lowell	June 26, 1916	62
1910	Frost, Henry Pinckney	Boston	May 23, 1917	48
1903	Gay, Herbert Seymour	Boston	Apr. 21, 1917	46
1893	Gay, Warren Fisher	Boston	Aug. 26, 1916	50
1872	†Gilman, Eugene Albert	Dorchester	June 17, 1916	74
1869	Hanscom, Sanford	Somerville	Sept. 20, 1916	75
1899	Haviland, Nathaniel Clark Bacon	Worcester	Apr. 22, 1917	63
1903	Hayes, Wentworth Larrabee	So. Yarmouth	Aug. 13, 1916	39
1900	Holt, Frank Hammett	Chicago	Aug. 3, 1916	47
1909	Hoole, John Edward	Somerville	Feb. 15, 1917	49
1913	Keany, Francis Joseph	Boston	Nov. 23, 1916	50
1880	†Lane, Albert Clarence	Boston	Feb. 1, 1917	65
1902	Lithgow, Robert Alexander Douglas-	Boston	Feb. 16, 1917	70
1898	Lockary, Joseph Logue	St. Stephen, N. B.	Aug. 13, 1916	45
1887	Lyon, Arthur Vinal	Brockton	Feb. 21, 1917	54
1896	McIntosh, Herbert	Cambridge	April 24, 1917	60
1890	Meigs, Joe Vincent	Lowell	Mar. 9, 1917	50
1896	Merrill, Arthur Ellsworth	Somerville	Mar. 17, 1917	51
1917	O'Brien, John Charles, Jr.	Greenfield	May 23, 1917	26
1886	O'Shea, Joseph Francis	Lynn	Mar. 29, 1917	54
1877	Parks, Edward Luther	Boston	Feb. 8, 1917	67
1895	Pedrick, Stephen Augustus	Rowley	Jan. 11, 1917	45
1874	†Pillsbury, Warren Wilbur	Newburyport	Apr. 1, 1917	69
1886	Pomeroy, Hiram Stirling	Auburndale	Apr. 20, 1917	69
1866	Rice, Charles Henry	Fitchburg	Jan. 5, 1917	73
1902	Robinson, Harry Pringle	Amesbury	Nov. 28, 1916	40
1883	Sanborn, Frederick James	Spencer	Nov. 20, 1916	55
1869	†Seymour, Christopher	Northampton	May 19, 1917	74
1895	Shea, Thomas Bernard	Boston	Mar. 25, 1917	54
1874	Spear, Edmund Doe	Jamaica Plain	Dec. 25, 1916	65
1912	Staples, Hall	West Acton	Mar. 7, 1917	46
1913	Stone, Charles Edwin	Lynn	Nov. 5, 1916	48
1889	Stone, George Arthur	Pigeon Cove	July 28, 1916	50
1875	†Tucker, Edward Tobey	New Bedford	Apr. 10, 1917	67
1896	Thompson, John Joseph	Webster	Sept. 16, 1916	56
1884	Underwood, George Baker	Gardner	Feb. 2, 1917	62
1913	White, Robert Marshall	Dorchester	Feb. 13, 1917	36
1870	†Willis, Reuben	Roxbury	Sept. 6, 1916	73
1880	Withington, Charles Francis	Boston	Jan. 7, 1917	64
1873	†Woodbury, Louis Augustus	Groveland	July 18, 1916	71
1882	Woods, Jonathan Henry	Brookline	Nov. 16, 1916	65

† Retired Fellow.

Total, 53 deaths.

ADMISSIONS REPORTED FROM JUNE 7, 1916, TO JUNE 13, 1917.

Year of Admission.	Name.	Residence.	Medical College.
1917	Aaronson, Jacob,	Lawrence,	11
1917	Aimone, Victor Anthony,	Winchester,	4
1916	Allen, Arthur Wilburn,	Boston	6
1916	Alley, Ernest Jason,	Billerica	22
1916	Aronson, Charles,	Salem	12
1917	Avedisyan, Avedis Der,	Roxbury	12
1917	Azadian, David George,	Boston	12
1917	Baker, Harold Nicholas,	Rockport	29
1917	Barnes, Frederick Rigby,	Fall River	19
1916	Barron, Maurice Edward,	Boston	12
1917	Bass, Harris,	Everett	12
1917	Bassow, George Joseph,	Athol	36
1916	Battershall, Jesse Wolfenden,	Attleborough,	12
1917	Beaudet, Elphege Aleime,	Lowell	12
1916	Berman, Myer Isadore,	Dorchester	12
1916	Berr, Alfred William,	Lawrence	12
1917	Berry, Walter Durant,	Braintree	27
1916	Bober, Bessie Angela,	Northampton	39
1916	Bolduc, Alfred George,	Attleborough	12
1917	Briggs, Joseph Emmons,	Boston	10
1917	Buck, William Edgar,	Wilmington	5
1916	Butler, Alice Etta,	Boston	12
1917	Butler, Samuel,	Medway	36
1916	Cass, Frank Ozro,	Provincetown	10
1917	Chadwell, Orville Rogers,	Jamaica Plain	10
1916	Chalfen, Samuel Edward,	Cambridge	12
1917	Chisholm, Lawrence Chesley,	Salem	12
1916	Clark, DeWitt Scoville,	Salem	11
1916	Cody, Peter White,	Lawrence	25
1917	Cohen, Joseph Powitzer,	Brookline	11
1916	Cohen, Milton Michael,	Roxbury	12
1917	Cottle, Louis Albert,	Worcester	19
1917	Croissant, Charles Augustus,	Worcester	31
1916	Day, Edward Philip,	Dorchester	5
1917	DeMarco, Thomas Andreas,	Springfield	42
1917	Dennett, Paul Carroll,	Chelsea	12
1916	Derby, Frederick William,	Boston	12
1916	Dervin, Peter John,	Dorchester	15
1917	Dillon, William Joseph,	Springfield	32
1917	DiMento, Vincent James,	Boston	12
1917	Dole, Kenneth Llewellyn,	Jamaica Plain	11
1917	Ducharme, Alphonse Napoleon,	Worcester	12
1916	Duff, John, Jr.,	Charlestown	12
1916	Easter, Edna Frances,	Worcester	12
1917	Edelstein, Samuel,	Roxbury	12
1917	Emerson, Frederick Lincoln,	Dorchester	10
1917	Foot, Nathan Chandler,	Milton	17
1916	Foster, Arthur Neville,	Dorchester	26
1917	Fowler, John Richard	Spencer	29
1916	Fregeau, Aimé Napoleon,	Fitchburg	12
1916	Friedman, Eli,	Boston	12
1917	Gay, William Madison,	Sharon	19
1916	Gennert, Jacob,	New Bedford	16
1917	Ginsburgh, Nathan Harry,	Brockton	10
1916	Grant, Winifred Margaret,	Worcester	12
1916	Grogan, Margaret Victorine,	Boston	12
1916	Gunning, Thomas Francis,	Fall River	19
1917	Guy, Walter Bryant,	Roxbury	10
1916	Halton, Edward Peter,	Springfield	2
1917	Hanson, William Greene,	Everett	10
1917	Harnett, Edward Henry Lewis,	Dorchester	12
1917	Hill, Ernest Linwood,	Millis	14

Year of Admission.	Name.	Residence.	Medical College.
1916	Holzman, Joseph	Roxbury	37
1917	Hopkins, Ralph Harrison	Boston	10
1917	Howard, Charles Tilden	Boston	10
1917	Howe, Winfred Lewis	Everett	12
1917	Howes, Willard Boyden	Rutland	10
1917	Hudson, Carl Bibb	East Boston	11
1916	Hughes, Edgar Hamill	Northampton,	28
1916	Hyde, Harold Valmore	Boston	11
1917	Ingoldsby, Joseph Emmanuel	Dorchester	11
1917	Irving, Harry Washington	Boston	12
1917	Jewett, Howard Wakefield	Lowell	21
1916	Kandib, Anna Hilda	Danvers	12
1917	Kane, William Vincent	Lynn	12
1916	Keenan, James Alphonsus	Boston	12
1917	Kelley, Eugene Robert	Boston	6
1916	Kelley, Henry Joseph	Dorchester	22
1916	Kewer, Leo Thomas	Waverley	12
1917	Khoury, Kamel	Worcester	40
1916	Koplin, Harry	Springfield	12
1917	Lacey, Walter Hamer	Boston	11
1917	La Liberté, Elie Joseph	Fall River	12
1916	Lawlor, John Charles	South Boston	11
1916	Lawlor, James Francis	Beverly	22
1916	Lazarus, Louis	Worcester	11
1916	Ledbury, John William	Uxbridge	7
1916	Leith, Richard Bliss	Lawrence	12
1916	Levine, Harry Benjamin	Roxbury	12
1916	Little, George Thomas	Uxbridge	11
1917	Lawrence, Joseph Louis	Roxbury	11
1916	Lovesey, Burton Edward	Lowell	24
1916	MacGray, Charles Leverne	Needham	12
1917	MacIntyre, William Angus	Grafton	12
1917	Mahoney, John Lewis	Boston	10
1916	Manoogian, Byzant John	Peabody	10
1916	Margeson, Reginald Dimock	Boston	12
1917	Martin, George Forrest	Lowell	31
1916	May, James Vance	North Grafton	19
1916	McCartin, John Edward	Dorchester	12
1917	McWilliams, Norman Beattie	Williamstown	17
1917	Meredith, Florence Lyndon	Watertown	12
1916	Mernin, Mary Towler	Cambridge	12
1917	Merrill, Clyde Harold	Marlborough	5
1916	Miniter, Francis Gabriel	New York City	12
1916	Montague, Charles Elbert	Wakefield	10
1917	Moriarty, John Joseph	Danvers	12
1916	Muldoon, Mary Theresa	Somerville	12
1917	Murphy, Harold Alphonsus	Jamaica Plain	12
1916	Newton, Frank Loomis Sabin	Somerville	10
1917	Niles, John Otis Garfield	Everett	11
1916	Nissen, Harry Archibald	Boston	11
1916	Norris, Rolf Clarke	Methuen	14
1917	Noyes, Arthur Perry	Roxbury	19
1917	Nutt, Walter Elwyn	Methuen	36
1917	O'Brien, John Charles	Greenfield	22
1917	O'Brien, John Charles, Jr.	Greenfield	12
1916	Odeneal, Thomas Helm	Tewksbury	23
1917	Osman, Charles Franklin	Dorchester	11
1917	Overholser, Winfred	Boston	10
1916	Packard, Fabyan	Boston	11
1917	Paglia, Jeremiah James	Worcester	12
1916	Parris, Roland Oliver	Brookline	10
1916	Peck, Martin William	Lynn	11
1917	Pollock, Henry Meeker	Boston	33
1916	Porter, Charles Terrell	Boston	35
1917	Quennell, Willard Leslie	Cambridge	12
	(Readmitted by Censors)		
1916	Quinn, James Henry	Springfield	4
1917	Rafferty, Thomas Bernard	Lynn	12
1917	Reed, Carlisle	Boston	11
1916	Reeves, Marcellus	Boston	11
1917	Riordan, Arthur Hatton	Springfield	32
1916	Ruble, Wells Allen	Melrose	13
1916	Saltz, Sidney Meyer	Boston	32
1917	Salvin, Louis Wilton	Roxbury	10
1917	Scanlon, Joseph Michael	Lawrence	12
1916	Scarito, Nicholas Julius	Lawrence	3
1917	Sedgley, Frank Robert	West Roxbury	10
1917	Seibels, Robert Emmett	Springfield	17
1916	Shain, Arthur Irving	Roxbury	11
1916	Sheehan, Edward Bernard	Roxbury,	11
1917	Shields, Warren Sylvester	Boston	11
1916	Shinn, Philip Allen	Gloucester	12
1916	Silver, Louis Serebriany	Malden	12
1917	Skirball, Joseph Jacob	Boston	12
1916	Smith, Edwin Eugene	Quincy	12
1917	Smith-Petersen, Marius Nygaard	Boston	11
1917	Sowles, Horace Kennedy	Boston	11
1917	Streeter, Howard Alvertus	Pittsfield	10
1917	Swaim, Loring Tiffany	Cambridge	11
1917	Thompson, Herbert Ellery	Worcester	5
1916	Thompson, William James	Danvers	15
1916	Tobey, Harold Grant	Boston	11
1917	Towle, Fred Scates	Portsmouth, N. H.	17
1917	Trask, Harry Wallis	West Boylston	22
1917	Van Deursen, George Livesay	Lowell	21
1916	Van Gaasbeek, George Henry	Springfield	15
1917	Vivian, William James	East Walpole	14
1916	Voorhis, Kathalyn	Worcester	12
1916	Wadden, Joseph Matthew	Cambridge	12
1917	Wallace, John	Roxbury	41
1917	Warren, Charles Fletcher	Amesbury	11
1916	Waters, James Edward	Gardner	8
1916	Whitman, Luther Oakes	Amherst	9
	(Readmitted by Censors)		
1917	Williamson, Cordelia Isabella	Watertown	12
1917	Withington, Paul Richmond	Boston	11
1916	Zarrella, Angelo Mario	Lynn	12

Total, 165+2,=167

KEY TO MEDICAL COLLEGES.

2 Yale University, Medical Department.
3 George Washington University, Department of Medicine.
4 Georgetown University School of Medicine.
5 Medical School of Maine.
6 Johns Hopkins University, Medical Department.
7 College of Physicians and Surgeons, Baltimore, Maryland.
8 Baltimore Medical College.
9 University of the South.
10 Boston University School of Medicine.
11 Medical School of Harvard University.
12 Tufts College Medical School.
13 American Medical Missionary College.
14 Dartmouth Medical School.
15 Albany Medical College.
16 Long Island College Hospital.
17 Columbia University College of Physicians and Surgeons.
19 University of Pennsylvania, Department of Medicine.
21 Hahnemann Medical College and Hospital of Philadelphia.
22 University of Vermont, Medical Department.
23 Medical Department of the Tulane University of Louisiana.
24 Medico-Chirurgical College of Philadelphia.
25 College of Physicians and Surgeons, Keokuk, Iowa.
26 McGill University, Medical Faculty.
27 Medical College of the University of Cincinnati.
28 Fordham University School of Medicine.
29 University of Georgia, Medical Department.
31 New York Homeopathic Medical College and Flower Hospital.
32 University of Maryland, School of Medicine.
33 University of Minnesota, College of Medicine and Surgery.
35 Medical College of Virginia.
36 Baltimore University School of Medicine.
37 College of Physicians and Surgeons, Chicago, Illinois.
39 Halifax Medical College.
40 L'École de Médecine de Beyrouth.
41 Royal College of Surgeons, Edinburgh, Scotland.
42 Hahnemann Medical College and Hospital of Chicago.

OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Chosen by the Council, June 12, 1917.

Samuel B. Woodward, Worcester, President.
George P. Twitchell, Greenfield, Vice-president.
Walter L. Burrage, Boston, Secretary.
Arthur K. Stone, Boston, Treasurer.
Edwin H. Brigham, Brookline, Librarian.

STANDING COMMITEES.

Of Arrangements.—J. H. Young, J. L. Huntington, R. H. Miller, C. H. Lawrence, Jr., Donald Macomber, A. W. Reggio.

On Publications and Scientific Papers.—G. B. Shattuck, E. W. Taylor, R. B. Osgood, F. T. Lord, R. M. Green.

On Membership and Finance.—C. M. Green, A. Coolidge, Jr., Samuel Crowell, F. W. Taylor, Alfred Worcester.

On Ethics and Discipline.—J. A. Gage, J. W. Bartol, Henry Jackson, T. J. Robinson, David Cheever.

On Medical Education and Medical Diplomas.—H. C. Ernst, C. F. Painter, H. W. Newhall, J. F. Burnham, C. Frothingham, Jr.

On State and National Legislation.—S. B. Woodward, F. G. Wheatley, W. P. Bowers, W. H. Robey, Jr., J. S. Stone.

On Public Health—E. H. Bigelow, W. I. Clark, Annie L. Hamilton, R. I. Lee, E. F. Cody.

PRESIDENTS OF DISTRICT MEDICAL SOCIETIES.

Vice-Presidents (*Ex-Officiis*).

Arranged according to seniority of fellowship in the Massachusetts Medical Society.

G. T. Tuttle	Middlesex South
H. F. Vickery	Suffolk
W. P. Lawler	Middlesex North
N. K. Noyes	Plymouth
M. F. Fallon	Worcester
J. H. Ash	Norfolk South
E. G. Fosgate	Worcester North
A. G. Minshall	Hampshire
T. R. Healy	Essex North
H. A. Gale	Middlesex East
J. C. Pitta	Bristol South
W. H. Allen	Bristol North
P. P. Johnson	Essex South
E. S. Osborne	Barnstable
H. N. Howe	Franklin
A. C. Merrill	Berkshire
F. W. Sleeper	Norfolk
J. M. Birnie	Hampden

COUNCILORS, 1917-1918.

Note.—The initials M. N. C., following the name of a councilor, indicate that he is a member of the Nominating Committee. V.P. indicates that a member is a councilor by virtue of his office of president of a district society, and so vice-president of the general society. C. indicates that he is chairman of a Standing Committee. Ex-P. indicates ex-president.

Barnstable,
E. S. Osborne, V.P., West Dennis.
C. W. Milliken, M.N.C., Barnstable.
J. P. Nickerson, West Harwich.

Berkshire,
A. P. Merrill, V.P., Pittsfield.
C. S. Chapin, Great Barrington.
Henry Colt, Pittsfield.
W. W. Jones, Housatonic.
J. W. Riley, M.N.C., North Adams.

Bristol North,
W. H. Allen, V.P., Mansfield.
A. B. Goss, Taunton.
W. O. Hewitt, Attleborough.
F. A. Hubbard, M.N.C., Taunton.
S. D. Presbrey, Ex-P., Taunton.

Bristol South,
J. C. Pitta, V.P., New Bedford.
E. F. Cody, New Bedford.
C. F. Connor, M.N.C., New Bedford.
E. F. Curry, Fall River.
A. B. Cushman, South Dartmouth.
W. A. Dolan, Fall River.
R. W. Jackson, Fall River.
A. H. Mandell, New Bedford.

Essex North,
T. R. Healy, V.P., Newburyport.
J. Q. Adams, Amesbury.
G. M. Atwood, Bradford.
R. V. Baketel, Methuen.
I. J. Clarke, Haverhill.
G. E. Kurth, Lawrence.
E. H. Noyes, Newburyport.
J. J. O'Sullivan, Lawrence.
F. W. Snow, M.N.C., Newburyport.

Essex South,
P. P. Johnson, V.P., Beverly.
C. H. Bangs, Lynn.
R. E. Bicknell, Swampscott.
N. P. Breed, Lynn.
D. J. Finegan, Gloucester.
H. K. Foster, Peabody.
W. T. Hopkins, Lynn.
J. B. Macdonald, Danvers (Hathorne).
P. P. Moore, Gloucester.
W. G. Phippen, Salem.
Emile Poirier, M.N.C., Salem.
H. E. Sears, Beverly.
R. E. Stone, Beverly.

Franklin,
H. N. Howe, V.P., Greenfield.
G. P. Twitchell, M.N.C., Greenfield.
N. P. Wood, Northfield.

Hampden,
J. M. Birnie, V.P., Springfield.
T. S. Bacon, Springfield.
E. P. Bagg, Jr., Holyoke.
J. J. Carroll, Holyoke.
L. D. Chapin, Springfield.
P. M. Cort, Springfield.
A. C. Eastman, Springfield.
R. A. Greene, Monson.
E. A. Knowlton, Holyoke.
L. E. Mannix, Chicopee.
R. B. Ober, Springfield.
A. G. Rice, Springfield.
G. L. Schadt, Springfield.
H. W. Van Allen, M.N.C., Springfield.

Hampshire,
A. G. Minshall, V.P., Northampton.
C. A. Byrne, Hatfield.
J. S. Hitchcock, M.N.C., Northampton.
F. H. Smith, Hadley.

Middlesex East,
H. A. Gale, V.P., Winchester.
J. W. Heath, M.N.C., Wakefield.
E. S. Jack, Melrose.
W. H. Keleher, Woburn.
G. N. P. Mead, Winchester.

MIDDLESEX NORTH,
W. P. Lawler, V.P., Lowell.
J. A. Gage, C., Lowell.
A. R. Gardner, Lowell.
W. B. Jackson, M.N.C., Lowell.
J. H. Lambert, Lowell.
G. O. Lavalée, Lowell.
E. G. Livingston, Lowell.
M. A. Tighe, Lowell.

MIDDLESEX SOUTH,
G. T. Tuttle, V.P., Waverley.
E. S. Abbot, Waverley.
H. T. Baldwin, Chestnut Hill.
S. O. Baldwin, Framingham.
F. E. Bateman, Somerville.
E. H. Bigelow, C., Framingham.
C. H. Cook, Natick.
E. A. Darling, Cambridge.
D. C. Dow, Cambridge.
A. W. Dudley, Cambridge.
John Duff, Charlestown.
W. E. Fernald, Waverley.
G. W. Gay, Ex-P., Chestnut Hill.
C. M. Hutchinson, Cambridge.
A. A. Jackson, Everett.
Edward Mellus, Newton.
C. E. Mongan, Somerville.
C. E. Prior, Malden.
W. A. Putnam, Cambridge.
Godfrey Ryder, Malden.
L. F. Sise, Medford.
Joseph Stanton, Brighton.
E. H. Stevens, M.N.C., Cambridge.
F. R. Stubbs, Newton
Julia Tolman, Arlington.
H. P. Walcott, Ex-P., Cambridge.
C. T. Warner, Marlborough.
G. W. Whiting, Somerville.
Alfred Worcester, Waltham.
J. H. Young, C., Newton.

NORFOLK,
F. W. Sleeper, V.P., Dorchester.
J. W. Bail, Brookline.
W. W. Barker, Dorchester.
W. H. Bennett, Hyde Park.
E. H. Brigham, L., Brookline.
A. N. Broughton, Jamaica Plain.
T. J. Coyne, Roxbury.
S. F. Curran, Dorchester.
H. W. Dana, Brookline.
H. M. Emmons, Jamaica Plain.
H. C. Ernst, C., Jamaica Plain.
C. B. Faunce, Jamaica Plain.
T. F. Greene, Roxbury.
R. W. Hastings, Brookline.
G. W. Kaan, Brookline.
Bradford Kent, Dorchester.
W. C. Kite, Milton.
Joseph Kittredge, Brookline.
W. A. Lane, Milton.
Louis Mendelsohn, Dorchester.
E. F. Murphy, Roxbury.
T. J. Murphy, M.N.C., Roxbury.
A. P. Perry, Jamaica Plain.
J. W. Pratt, Dedham.
J. A. Reilly, Dorchester.
S. H. Rubin, Roxbury.
Victor Safford, Jamaica Plain.
R. D. Schmidt, Dorchester.
C. E. Shay, Roxbury.
H. F. R. Watts, Dorchester.

NORFOLK SOUTH,
J. H. Ash, V.P., Quincy.
C. S. Adams, Wollaston.
F. R. Burke, Quincy.
G. H. Ryder, M.N.C., Quincy.

PLYMOUTH,
N. K. Noyes, V.P., Duxbury.
A. A. MacKeen, Whitman.
Gilman Osgood, Rockland.
A. E. Paine, M.N.C., Brockton.
F. J. Ripley, Brockton.
F. G. Wheatley, Brockton.

SUFFOLK,
H. F. Vickery, V.P., Boston.
E. S. Boland, South Boston.
H. I. Bowditch, Brookline,
G. W. W. Brewster, M.N.C., Boston.
W. L. Burrage, S., Boston.
A. L. Chute, Boston.
E. A. Codman, Boston.
J. A. Cogan, Boston.
F. J. Cotton, Boston.
G. A. Craigin, Boston.
E. G. Cutler, Boston.
R. L. DeNormandie, Boston.
Albert Ehrenfried, Boston.
Channing Frothingham, Boston.
C. M. Green, C., Boston.
J. B. Hawes, 2d, Boston.
W. C. Howe, Boston.
H. T. Hutchins, Boston.
Henry Jackson, Boston.
R. W. Lovett, Boston.
W. A. Morrison, East Boston.
J. L. Morse, Boston.
Abner Post, Boston.
Anna G. Richardson, Boston.
W. H. Robey, Jr., Boston.
D. D. Scannell, Boston.
G. G. Sears, Boston.
G. B. Shattuck, C., Boston.
G. C. Smith, Boston.
G. G. Smith, Boston..
Mary A. Smith, Boston.
P. M. Smith, Boston.
R. M. Smith, Boston.
A. K. Stone, T., Boston.
F. B. Talbot, Boston.
D. H. Walker, Boston.
John Warren, Boston.

WORCESTER,
M. F. Fallon, V.P., Worcester.
F. H. Baker, Worcester.
W. P. Bowers, Ex-P., Clinton.
F. H. Clapp, North Grafton.
W. J. Delahanty, Worcester.
J. T. Duggan, Worcester.
Homer Gage, Worcester.
J. O. Genereux, Webster.
R. W. Greene, Worcester.
David Harrower, M.N.C., Worcester.
A. G. Hurd, Millbury.
W. L. Johnson, Uxbridge.
G. O. Ward, Worcester.
F. H. Washburn, Holden.
C. D. Wheeler, Worcester.
S. B. Woodward, P., Worcester.

WORCESTER NORTH.
E. G. Fosgate, V.P., Ashburnham.
J. G. Henry, Winchendon.
A. P. Mason, M.N.C., Fitchburg.
E. A. Sawyer, Gardner.
A. A. Wheeler, Leominster.

CENSORS, 1917-1918.

BARNSTABLE.
C. E. Harris, Hyannis.
S. F. Haskins, Cotuit.
J. H. Higgins, Marston's Mills.
W. D. Kinney, Osterville.
C. W. Milliken, Supervisor, Hyannis.

Berkshire,
W. E. Brown, North Adams.
Henry Colt, Supervisor, Pittsfield.
William Galvin, Blackinton.
A. C. England, Pittsfield.
G. P. Hunt, Pittsfield.

Bristol North,
H. B. Baker, Dighton.
T. F. Clark, Taunton.
E. J. Galligan, Taunton.
F. A. Hubbard, Supervisor, Taunton.
T. J. Robinson, Taunton.

Bristol South,
W. A. Dolan, Supervisor, Fall River.
J. G. Hathaway, New Bedford.
W. T. Learned, Fall River.
C. J. Leary, New Bedford.
I. N. Tilden, Mattapoisett.

Essex North,
J. E. Bryant, Haverhill.
H. L. Conner, Haverhill.
R. C. Hurd, Newburyport.
J. J. O'Sullivan, Supervisor, Lawrence.
F. D. McAllister, Lawrence.

Essex South,
J. A. Bedard, Lynn.
L. Grimes, Swampscott.
W. G. Phippen, Supervisor, Salem.
B. F. Sturgis, Salem.
J. W. Trask, Lynn.

Franklin,
E. G. Best, Greenfield.
J. W. Cram, Colrain.
C. C. Messer, Turner's Falls.
G. P. Twitchell, Supervisor, Greenfield.
C. L. Upton, Greenfield.

Hampden,
T. S. Bacon, Supervisor, Springfield.
M. W. Harrington, Springfield.
G. D. Henderson, Holyoke.
Michael O'Shea, Chicopee.
G. L. Woods, Springfield.

Hampshire,
W. J. Adams, Northampton.
C. A. Byrne, Supervisor, Hatfield.
C. T. Cobb, Northampton.
W. J. Collins, Northampton.
J. E. Hayes, Northampton.

Middlesex East,
G. F. Dow, Reading.
E. S. Jack, Supervisor, Melrose,
G. W. Nickerson, Stoneham.
J. A. O'Leary, Wakefield.
C. E. Ordway, Winchester.

Middlesex North,
G. E. Caisse, Lowell.
E. J. Clark, Lowell.
J. H. Lambert, Supervisor, Lowell.
J. P. McAdams, Lowell.
E. J. Welch, Lowell.

Middlesex South,
E. S. Abbot, Supervisor, Waverley.
F. J. Goodridge, Cambridge.
C. E. Hills, South Natick.
F. L. Morse, Somerville.
F. W. Rice, Brighton.

Norfolk,
M. J. Cronin, Roxbury.
F. P. Denny, Brookline.
W. C. Kite, Supervisor, Milton.
J. C. Stedman, Jamaica Plain.

Norfolk South.
K. H. Granger, South Weymouth.
C. H. Gould, Braintree.
C. J. Lynch, Quincy.
J. A. Peterson, Hingham.
G. H. Ryder, Supervisor, Quincy.

Plymouth,
J. H. Drohan, Brockton.
Joseph Frame, Rockland.
W. W. Fullerton, Brockton.
R. B. Rand, North Abington.
F. J. Ripley, Supervisor, Brockton.

Suffolk,
J. W. Cummin, Boston,
C. N. Cutler, Chelsea.
H. W. Goodall, Boston.
W. C. Howe, Boston.
W. H. Robey, Jr., Supervisor, Boston.

Worcester,
W. E. Denning, Worcester.
D. F. O'Connor, Worcester.
W. C. Seelye, Worcester.
C. B. Stevens, Worcester.
F. H. Washburn, Supervisor, Holden.

Worcester, North.
B. H. Hopkins, Ayer.
A. P. Lowell, Fitchburg.
A. P. Mason, Supervisor, Fitchburg.
H. R. Nye, Leominster.
W. F. Robie, Baldwinsville.

COMMISSIONERS OF TRIALS.

1917-1918.

Barnstable, W. D. Kinney, Osterville.
Berkshire, H. B. Holmes, Adams.
Bristol North, C. S. Holden, Attleborough.
Bristol South, W. E. Synan, Fall River.
Essex North, J. F. Croston, Haverhill.
Essex South, J. E. Simpson, Salem.
Franklin, F. E. Johnson, Erving.
Hampden, F. H. Allen, Holyoke.
Hampshire, M. W. Pierson, Ware.
Middlesex East, C. W. Harlow, Melrose Highlands.
Middlesex North, F. E. Varney, North Chelmsford.
Middlesex South, L. M. Palmer, Framingham.
Norfolk, A. P. Perry, Jamaica Plain.
Norfolk South, N. S. Hunting, Quincy.
Plymouth, F. J. Hanley, Whitman.
Suffolk, F. B. Lund, Boston.
Worcester, G. F. Hart, Webster.
Worcester North, F. H. Thompson, Fitchburg.

OFFICERS OF THE DISTRICT MEDICAL SOCIETIES.

1917-1918.

Barnstable.—E. S. Osborne, West Dennis, President; F. A. Binford, Hyannis, Vice-President; P. F. Miller, Harwich, Secretary; H. B. Hart, Yarmouthport, Treasurer; S. M. Beale, Jr., Sandwich, Librarian.

Berkshire.—A. P. Merrill, Pittsfield, President; Vanderpoel Adriance, Williamstown, Vice-President; O. L. Bartlett, Pittsfield, Secretary; J. D. Howe, Pittsfield, Treasurer.

Bristol North.—W. H. Allen, Mansfield, President; H. G. Ripley, Taunton, Vice-President; A. R. Crandell, Taunton, Secretary; W. Y. Fox, Taunton, Treasurer.

Bristol South.—J. C. Pitta, New Bedford, President; J. A. Barre, Fall River, Vice-President; A. J. Abbe, Fall River, Secretary and Treasurer.

Essex North.—T. R. Healy, Newburyport, President; F. E. Sweetsir, Merrimac, Vice-President; J. F. Burnham, Lawrence, Secretary and Treasurer.

Essex South.—P. P. Johnson, Beverly, President; J. F. Jordan, Peabody, Vice-President; H. P. Bennett, Lynn, Secretary; G. Z. Goodell, Salem, Treasurer; C. M. Cobb, Lynn, Librarian.

Franklin.—H. N. Howe, Greenfield, President; Charles Moline, Sunderland, Vice-President; F. A. Millett, Greenfield, Secretary and Treasurer.

Hampden.—J. M. Birnie, Springfield, President; M. B. Hodskins, Monson, Vice-President; H. L. Smith, Springfield, Secretary and Treasurer.

Hampshire.—A. G. Minshall, Northampton, President; A. G. Rockwell, Amherst, Vice-President; J. D. Collins, Northampton, Secretary; J. J. Hanson, Northampton, Treasurer; F. E. Dow, Northampton, Librarian.

Middlesex East.—H. A. Gale, Winchester, President; M. D. Sheehan, Stoneham, Vice-President; A. E. Small, Melrose, Secretary; Richard Dutton, Wakefield, Treasurer; G. W. Nickerson, Stoneham, Librarian.

Middlesex North.—W. P. Lawler, Lowell, President; G. H. A. Leahey, Lowell, Vice-President; J. A. Mehan, Lowell, Secretary; T. B. Smith, Lowell, Treasurer; P. J. Meehan, Lowell, Librarian.

Middlesex South.—G. T. Tuttle, Waverley, President; H. T. Baldwin, Chestnut Hill, Vice-President; L. S. Hapgood, Cambridge, Secretary; F. W. Plummer, Malden, Treasurer.

Norfolk.—F. W. Sleeper, Dorchester, President; E. N. Libby, Jamaica Plain, Vice-President; Bradford Kent, Dorchester, Secretary; G. W. Kaan, Brookline, Treasurer.

Norfolk South.—J. H. Ash, Quincy, President; E. N. Bushnell, Quincy, Vice-President; F. H. Merriam, Braintree, Secretary, Treasurer and Librarian.

Plymouth.—N. K. Noyes, Duxbury, President; Gilman Osgood, Rockland, Vice-President; A. C. Smith, Brockton, Secretary, Treasurer and Librarian.

Suffolk.—H. F. Vickery, Boston, President; J. B. Blake, Boston, Vice-President; G. G. Smith, Boston, Secretary; E. B. Young, Boston, Treasurer; W. P. Coues, Boston, Librarian.

Worcester.—M. F. Fallon, Worcester, President; W. L. Johnson, Uxbridge, Vice-President; E. L. Hunt, Worcester, Secretary; G. O. Ward, Worcester, Treasurer; G. C. Lincoln, Worcester, Librarian.

Worcester North.—E. G. Fosgate, Ashburnham, President; A. H. Pierce, Leominster, Vice-President; C. H. Jennings, Fitchburg, Secretary; F. H. Thompson, Jr., Fitchburg, Treasurer; A. P. Mason, Fitchburg, Librarian.

List of Presidents of the Massachusetts Medical Society—1782-1917.

*Edward Augustus Holyoke	1782-1784
*William Kneeland	1784-1786
*Edward Augustus Holyoke	1786-1787
*Cotton Tufts	1787-1795
*Samuel Danforth	1795-1798
*Isaac Rand	1798-1804
*John Warren	1804-1815
*Joshua Fisher	1815-1823
*John Brooks	1823-1825
*James Jackson	1825-1832
*John Collins Warren	1832-1836
*George Cheyne Shattuck	1836-1840
*Rufus Wyman	1840-1842
*Jacob Bigelow	1842-1847
*Zadok Howe	1847-1848
*John Ware	1848-1852
*George Hayward	1852-1855
*Elisha Huntington	1855-1857
*Luther V Bell	1857-1859
*John Homans	1859-1862
*Josiah Bartlett	1862-1864
*Augustus Addison Gould	1864-1866
*Henry Colt Perkins	1866-1868
*Charles Gideon Putnam	1868-1870
*Samuel Augustus Fisk	1870-1872
*George Cheyne Shattuck	1872-1874
*Benjamin Eddy Cotting	1874-1876
*William Cogswell	1876-1878
*George Hinckley Lyman	1878-1880
*Henry Willard Williams	1880-1882
*Alfred Hosmer	1882-1884
*Charles Dudley Homans	1884-1886
*Thomas Hovey Gage	1886-1888
*David Williams Cheever	1888-1890
*Amos Howe Johnson	1890-1892
*James Clarke White	1892-1894
*Franklin Kittredge Paddock	1894-1896
Henry Pickering Walcott	1896-1898
*Edwin Bayard Harvey	1898-1900
*Frank Winthrop Draper	1900-1902
*George Ebenezer Francis	1902-1904
*Arthur Tracy Cabot	1904-1906
George Washington Gay	1906-1908
Silas Dean Presbrey	1908-1910
George Brune Shattuck	1910-1912
Walter Prentice Bowers	1912-1914
*Charles Francis Withington	1914-1916
Samuel Bayard Woodward	1916-

* Deceased.

◆

THE MASSACHUSETTS MEDICAL SOCIETY.

Franklin District Medical Society.—The next meeting of the Franklin District Medical Society will be held at the Mansion House, Greenfield, July 10, 1917, at 11.15 A.M.

Papers

The Management of Labor.
Dr. George P. Twitchell, Greenfield.
Ear Complications of Infectious Diseases, with Case Reports. Dr. Frank A. Millett, Greenfield.

Frank A. Millett, *Secretary.*

◆

Miscellany.

APPOINTMENTS.

California State Board of Health:—*Professor Charles A Kofoid*, professor of zoölogy in the University of California, and his assistant, *Professor W. W. Cort*, have been appointed to the California State Board of Health. Provision has been made for the establishment of a biological laboratory for protozoölogical and helminthological work in conjunction with the Bureau of Communicable Diseases.

◆

RECENT DEATHS.

Ferdinand A. Stillings, M.D., of Concord, N. H., died at his home on June 22nd. He was born in Lancaster, N. H., on March 30, 1849. He had served as surgeon-general on the staffs of Governors Hiram Tuttle and Frank W. Rollins and had been president of the New Hampshire Medical Society. He was a member of the American College of Surgeons and other medical societies.

Lieut.-Col. George D. Deshon, U. S. A., chief surgeon on the staff of Brig.-Gen. Clarence R. Edwards of the Department of the Northeast, died on June 24 in Brookline, Mass. Lieut.-Col. Deshon was born in 1865. He had medical degrees from Dartmouth, Bellevue Medical College and the University of Pennsylvania, and had served in the Cuban and Philippine campaigns and was a department surgeon to Gen. Edwards at Panama. He is survived by a widow and a son.